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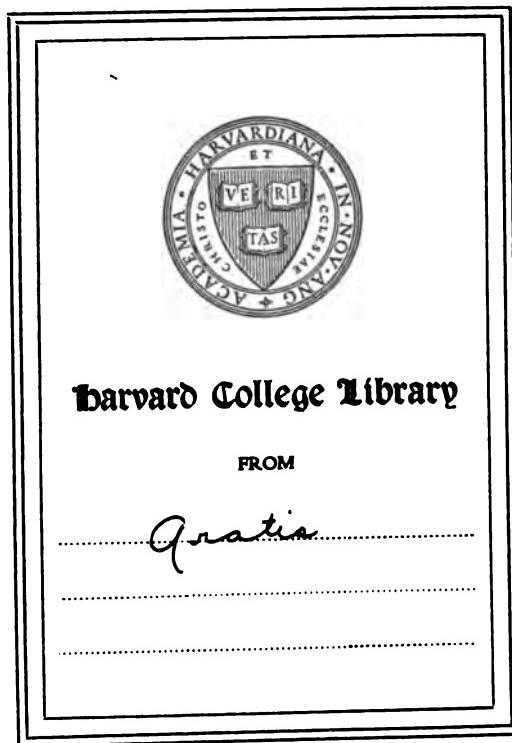
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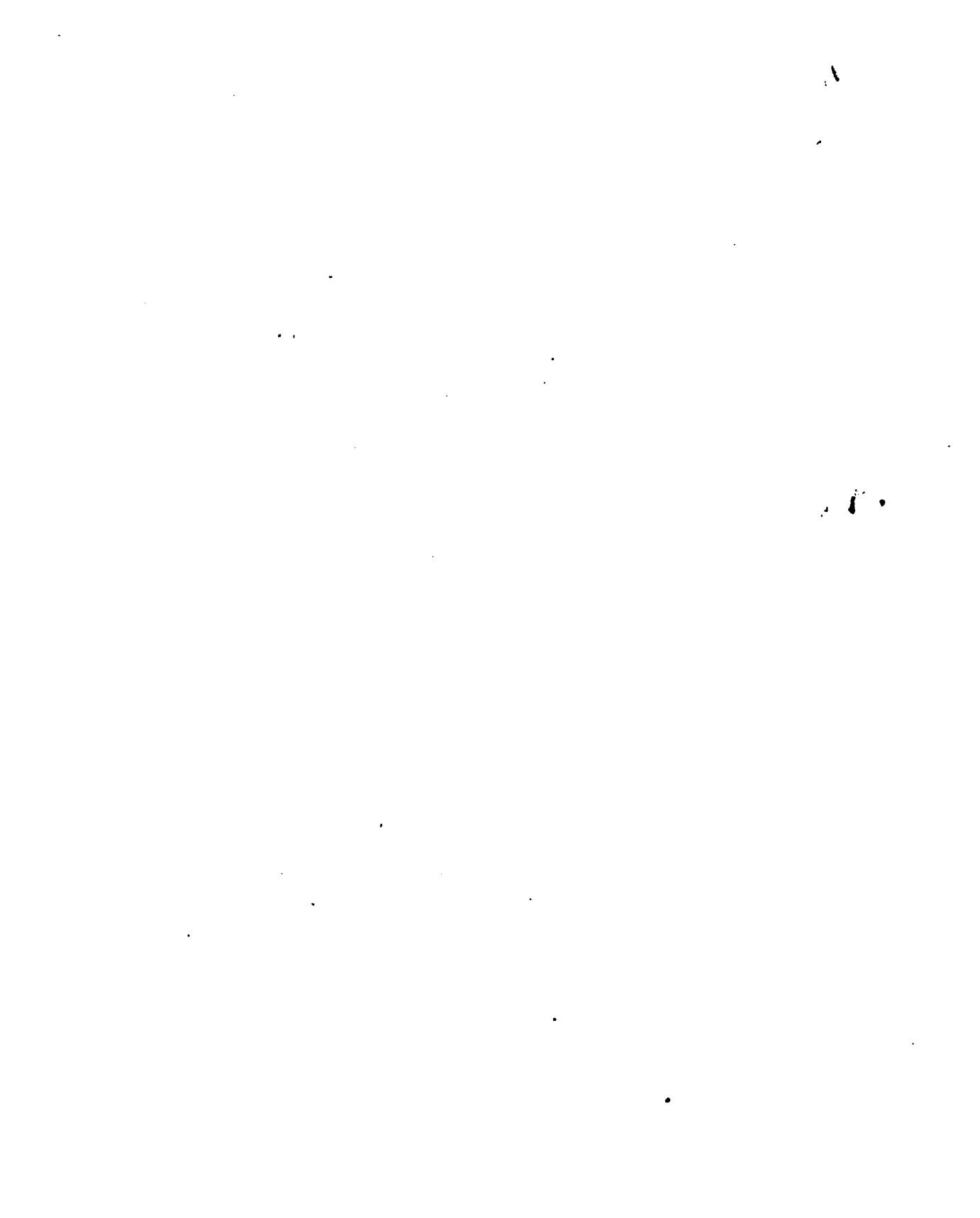
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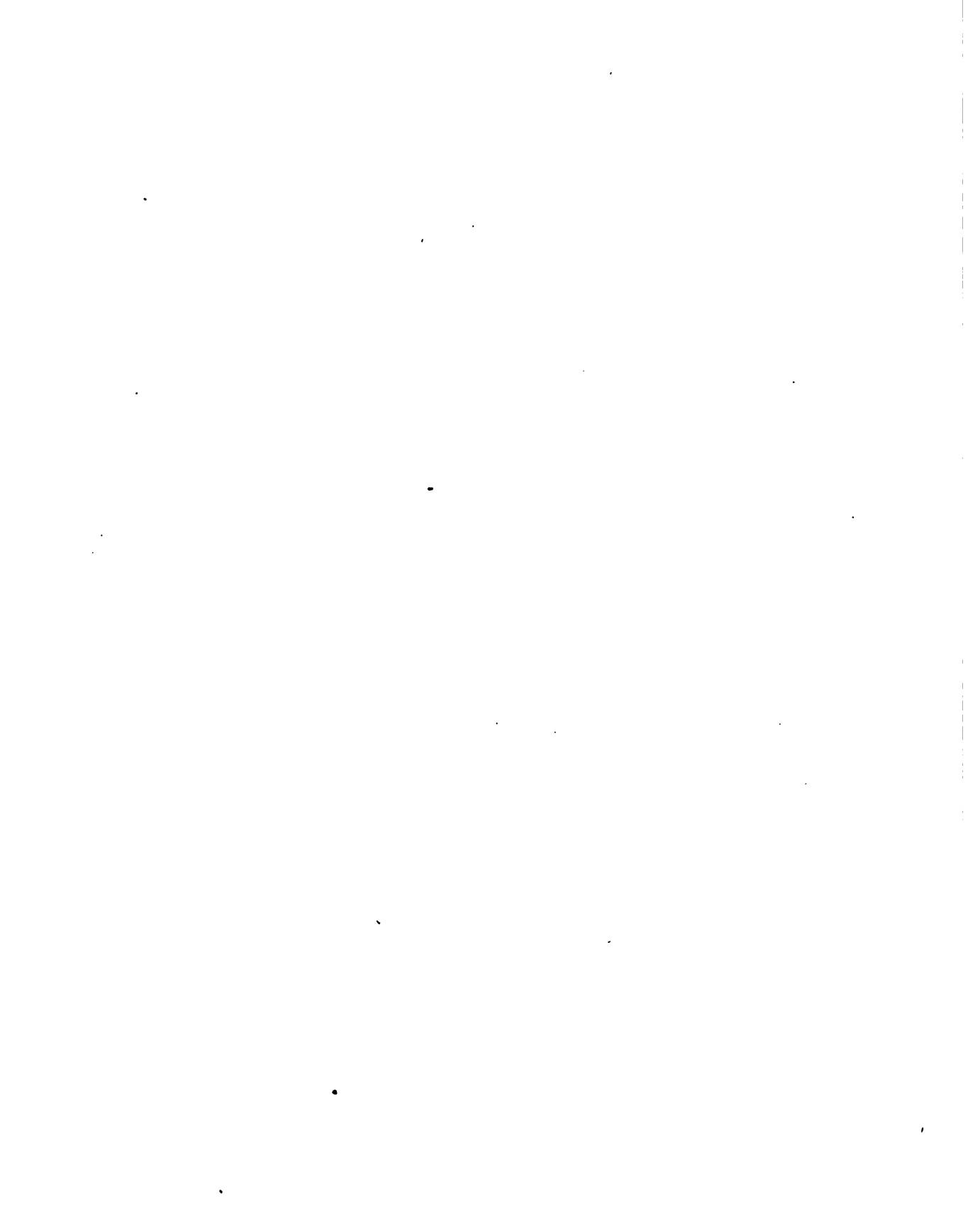
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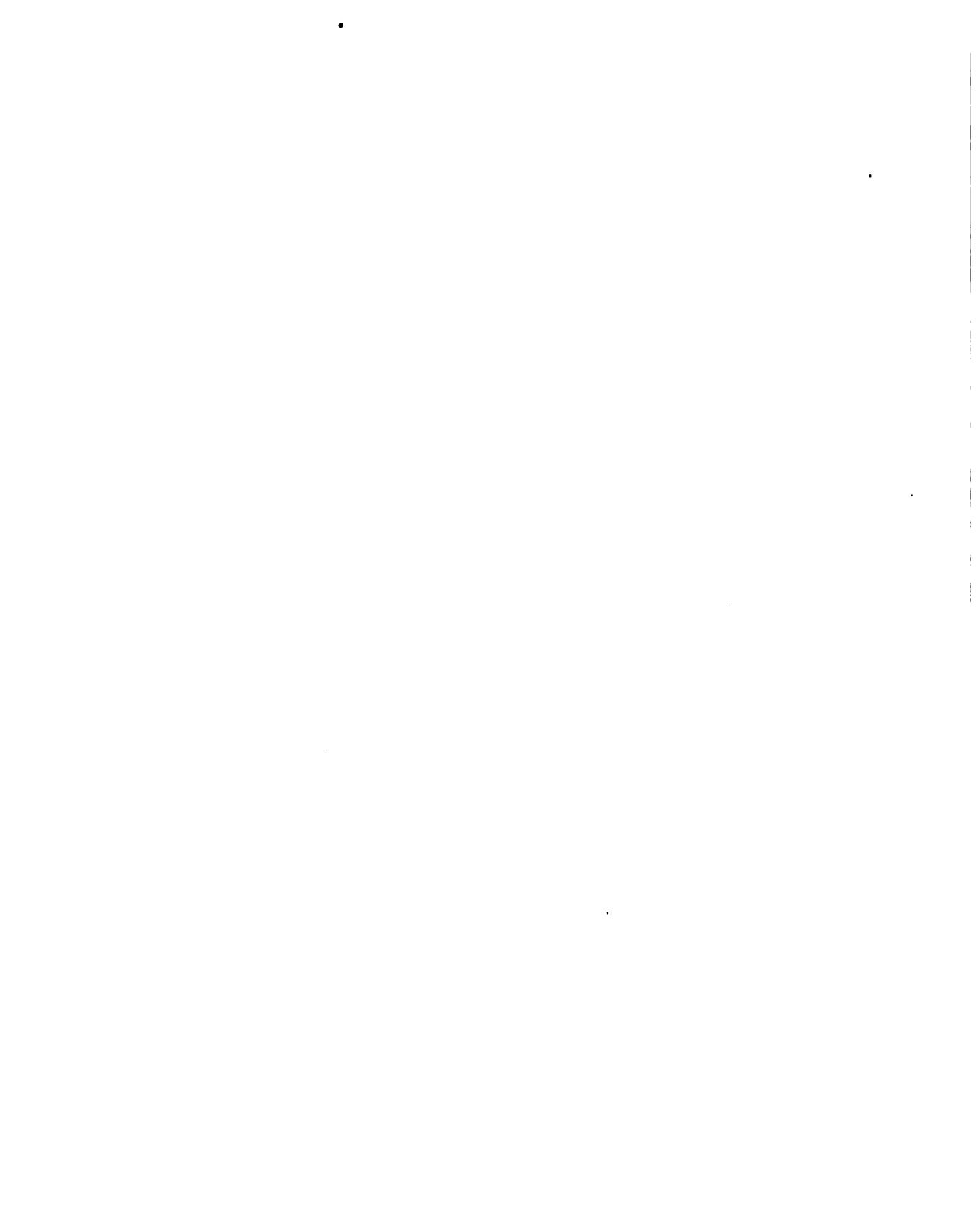
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*THE ASSOCIATION
OF
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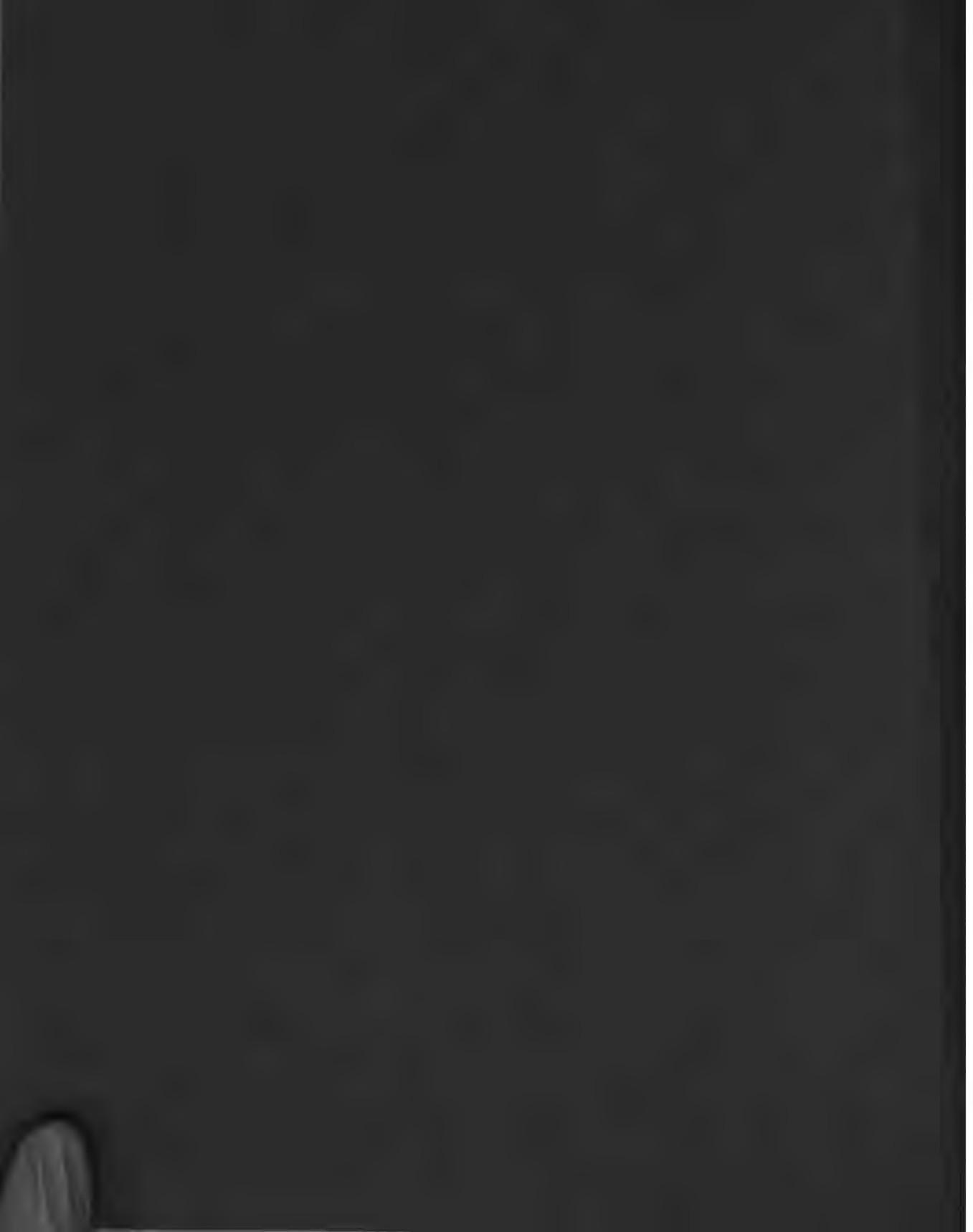
1900-1901

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*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The First and Second
Annual Conferences*

*1900-1901 - Address
of the Association*



The Association of American Universities

JOURNAL
OF
PROCEEDINGS AND ADDRESSES
OF THE
FIRST AND SECOND ANNUAL CONFERENCES

HELD AT
CHICAGO, ILLINOIS
FEBRUARY 27-28, 1900, AND
FEBRUARY 26-28, 1901

1901
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THE CONSTITUTION
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

ADOPTED FEBRUARY 28, 1900

I. NAME

This organization is called THE ASSOCIATION OF AMERICAN UNIVERSITIES.

II. PURPOSE

It is founded for the purpose of considering matters of common interest relating to graduate study.

III. MEMBERSHIP

1. *Qualifications.*—It is composed of institutions on the North American continent engaged in giving advanced or graduate instruction.

2. *Initial Membership.*—Its initial membership consists of the following institutions:

- University of California.
- Catholic University of America.
- The University of Chicago.
- Clark University.
- Columbia University.
- Cornell University.
- Harvard University.
- The Johns Hopkins University.
- The Leland Stanford, Jr., University.
- University of Michigan.
- University of Pennsylvania.
- Princeton University.
- University of Wisconsin.
- Yale University.

3. *Election of New Members.*—Other institutions may be admitted, at the annual conference, on the invitation of the Executive Committee, indorsed by a three-fourths vote of the members of the Association.

*The Association of American Universities***IV. MEETINGS**

The Association shall hold an annual conference at such time and place as the Executive Committee may direct.

V. PROGRAM

The Executive Committee shall prepare a program for each meeting.

VI. OFFICERS

The officers of the Association shall be President, Vice-President, and Secretary.

These three, with two others elected by the Association, shall constitute the Executive Committee.

VII. VOTING POWER

In each conference, each university may have any number of representatives, but each university shall have a single vote.

VIII. LIMITATION OF POWERS

No act of the Association shall be held to control the policy or line of action of any institution belonging to it.

MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California.

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois.

CLARK UNIVERSITY,
Worcester, Massachusetts.

COLUMBIA UNIVERSITY,
New York city, New York.

CORNELL UNIVERSITY,
Ithaca, New York.

HARVARD UNIVERSITY,
Cambridge, Massachusetts.

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland.

THE LELAND STANFORD, JR., UNIVERSITY,
Palo Alto, California.

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan.

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania.

PRINCETON UNIVERSITY,
Princeton, New Jersey.

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin.

YALE UNIVERSITY,
New Haven, Connecticut.

CALENDAR OF CONFERENCES

FIRST ANNUAL CONFERENCE (organization),
Chicago, Ill., February 27-28, 1900.

SECOND ANNUAL CONFERENCE,
Chicago, Ill., February 26-28, 1901.

OFFICERS

The first conference was called to order with Mr. Eliot, of Harvard University, in the chair, and with Mr. Harper, of the University of Chicago, as Secretary.

Upon permanent organization being effected, the following officers were elected for the year :

1900-1901

President—The representative of Harvard University.

Vice-President—The representative of the University of California.

Secretary—The representative of the University of Chicago.

For the additional members of the *Executive Committee*—The representative of Columbia University; the representative of the Johns Hopkins University.

1901-1902

President—The representative of Columbia University.

Vice-President—The representative of the University of Michigan.

Secretary—The representative of the University of Chicago.

For the additional members of the *Executive Committee*—The representative of the University of California; the representative of Harvard University.

A CONFERENCE OF AMERICAN UNIVERSITIES ON PROBLEMS CONNECTED WITH GRADUATE WORK

THE CALL

The presidents of Harvard University, Columbia University, the Johns Hopkins University, the University of Chicago, and the University of California issued an invitation to sister-institutions to a conference to be held in Chicago in February, 1900, for the consideration of problems connected with graduate work.

The following paragraphs embody important points in the invitation:

We beg to suggest that the time has arrived when the leading American universities may properly consider the means of representing to foreign universities the importance of revising their regulations governing the admission of American students to the examinations for the higher degrees.

This invitation is prompted by a desire to secure in foreign universities, where it is not already given, such credit as is legitimately due to the advanced work done in our own universities of high standing, and to protect the dignity of our Doctor's degrees. It seems to us, for instance, that European universities should be discouraged from conferring the degree of Doctor of Philosophy on American students who are not prepared to take the degree from our own best universities, and from granting degrees to Americans on lower terms than to their native students.

There is reason to believe that among other things the deliberations of such a conference as has been proposed will (1) result in a greater uniformity of the conditions under which students may become candidates for higher degrees in different American universities, thereby solving the question of migration, which has become an important issue with the Federation of Graduate Clubs; (2) raise the opinion entertained abroad of our own Doctor's degree; (3) raise the standard of our own weaker institutions.

This invitation is extended to the University of California, the Catholic University of America, the University of Chicago, Clark University, Columbia University, Cornell University, Harvard University, the Johns Hopkins University, University of Michigan, University of Pennsylvania, Princeton University, the Leland Stanford, Jr., University, University of Wisconsin, and Yale University. The United States Commissioner of Education has been invited to take part in the conference. The Federation of Graduate Clubs has likewise been invited to send a delegate.

In accordance with the above call, there was held at the University of Chicago, February 27 and 28, 1900, a conference of representatives of certain institutions.

After careful discussion of the subject, a permanent organization was effected under the name of THE ASSOCIATION OF AMERICAN UNIVERSITIES. The publication of the minutes and proceedings of the several conferences of the Association and of the meetings of its Executive Committee was authorized by vote of the Association at the second session of the Second Annual Conference, taken February 27, 1901.

THE FIRST ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

TUESDAY, FEBRUARY 27, 1900

MINUTES

2:30 P. M.—The FIRST SESSION was called to order in Haskell Assembly Room of the University of Chicago at 2:30 p. m., Tuesday, February 27, 1900, with Mr. Eliot, of Harvard University, in the chair.

The following representatives of the universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Benjamin Ide Wheeler, Mr. Armin Otto Leuschner.

CATHOLIC UNIVERSITY OF AMERICA—Mr. Thomas J. Conaty, Mr. Edward A. Pace, Mr. Daniel W. Shea.

THE UNIVERSITY OF CHICAGO—Mr. William Rainey Harper, Mr. William Gardner Hale.

CLARK UNIVERSITY—Mr. G. Stanley Hall, Mr. Edmund C. Sanford.

COLUMBIA UNIVERSITY—Mr. Nicholas Murray Butler.

HARVARD UNIVERSITY—Mr. Charles William Eliot.

THE JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen.

UNIVERSITY OF MICHIGAN—Mr. William H. Pettie.

UNIVERSITY OF PENNSYLVANIA—Mr. William Romaine Newbold.

PRINCETON UNIVERSITY—Mr. William Francis Magie.

THE LELAND STANFORD, JR., UNIVERSITY—Mr. David Starr Jordan.

In addition to the representatives of the universities, Mr. William T. Harris, Commissioner of Education of the United States, and Mr. Orlando Faulkland Lewis, representing the Federation of Graduate Clubs, were present upon invitation.

Mr. Leuschner, for the University of California, explained the object of the meeting in a few opening remarks.

Mr. Magie, of Princeton University, and Mr. Jordan, of the Leland Stanford, Jr., University, requested of the Chair a further statement as to the possible actions of the Conference.

Mr. Eliot replied briefly.

In the discussion which followed it was understood that the Conference was to be devoted to an interchange of views, without any definite motion being placed before the session.

The delegates responded in the order given below:

Mr. Newbold, of the University of Pennsylvania.

Mr. Remsen, of the Johns Hopkins University.

Mr. Magie, of Princeton University.

Mr. Conaty, of the Catholic University of America.

Mr. Pace, of the Catholic University of America.

Mr. Shea, of the Catholic University of America.

Mr. Newbold, of the University of Pennsylvania.

Mr. William T. Harris, Commissioner of Education of the United States.

Mr. Butler, of Columbia University.

At this point Mr. Lewis, of the Federation of Graduate Clubs, was introduced and spoke briefly.

Mr. Jordan, of the Leland Stanford, Jr., University, proposed that the desirability of a permanent organization be considered.

Mr. Harper, of the University of Chicago, suggested that a committee might be appointed for this purpose.

In the discussion of this subject remarks were made by the following delegates:

Mr. Pettie, of the University of Michigan; Mr. Sanford, of Clark University; Mr. Conaty, of the Catholic University of America; Mr. Hale, of the University of Chicago; Mr. Conaty, of the Catholic University of America; Mr. Shea, of the Catholic University of America; Mr. Leuschner, of the University of California.

Following Mr. Leuschner's remarks, it was voted that a Committee on Permanent Organization be appointed by the Chair.

The Chairman appointed as Committee on Permanent Organization the following:

Mr. Jordan, of the Leland Stanford, Jr., University.

Mr. Harper, of the University of Chicago.

Mr. Conaty, of the Catholic University of America.

Mr. Pettie, of the University of Michigan.

Mr. Newbold, of the University of Pennsylvania.

On motion, the Conference adjourned to meet the following day at 11 o'clock in the Fine Arts Building.

SECOND DAY'S PROCEEDINGS

WEDNESDAY, FEBRUARY 28, 1900

MINUTES

11 A. M.—The SECOND SESSION was called to order in the University Rooms of the Fine Arts Building at 11 A. M., Wednesday, February 28, 1900, with Mr. Eliot in the chair.

The Committee on Permanent Organization presented its report recommending the permanent organization of the fourteen universities represented at the Conference into an association under the name of THE ASSOCIATION OF AMERICAN UNIVERSITIES, and further presented for consideration the following draft of a constitution:

CONSTITUTION

This organization is called THE ASSOCIATION OF AMERICAN UNIVERSITIES.

It is founded for the purpose of considering matters of common interest relating to graduate study.

It is composed of institutions on the North American continent engaged in giving advanced or graduate instruction.

Its initial membership consists of the following institutions:

University of California.

Catholic University of America.

The University of Chicago.

Clark University.

Columbia University.

Cornell University.

Harvard University.

The Johns Hopkins University.

The Leland Stanford, Jr., University.

University of Michigan.

University of Pennsylvania.

Princeton University.

University of Wisconsin.

Yale University.

Other institutions may be admitted at the annual conference, on the invitations of the Executive Committee, indorsed by a three-fourths vote of the members of the Association.

The Association shall hold an annual conference at such time and place as the Executive Committee may direct.

The Executive Committee shall prepare a program for each meeting.

The officers of the Association shall be: President, Vice-President, Secretary. These three, with two others elected by the Association, shall constitute the Executive Committee.

In each conference each university may have any number of representatives, but each university shall have a single vote.

No act of the Association shall be held to control the policy or line of action of any institution belonging to it.

After some discussion, the above was adopted as the Constitution of the Association.

After the adoption of this Constitution, the following officers were elected for the ensuing year:

1900-1901

President—The representative of Harvard University.

Vice-President—The representative of the University of California.

Secretary—The representative of the University of Chicago.

For the additional members of the *Executive Committee*—The representative of Columbia University; the representative of the Johns Hopkins University.

It was voted to refer a communication from the American Academy of Medicine to the Executive Committee.

Mr. Newbold, of the University of Pennsylvania, moved that—

It is the sense of the Conference of the Association of American Universities, now in session, that the Executive Committee should, whenever possible, acquaint each member of the Association at least thirty days before any given meeting with the questions which the committee will then bring before the Conference and with the names of those institutions which the committee will then propose for membership.

The motion was carried.

On motion of Mr. Leuschner, of the University of California, the following suggestions were referred to the Executive Committee for consideration: (1) that the presidents of the institutions composing the Association of American Universities be requested by the Executive Committee to appoint from their respective graduate schools a committee to report to the Executive Committee on the following: (a) on migration of graduate students; (b) on ideals of general culture and specific training for the degrees of Doctor of Philosophy and Doctor of Science; (c) on the advisability of requesting foreign universities not to admit American students to the examinations for the degree of Doctor of Philosophy unless they present a Bachelor's degree from an American college or university; (d) on the advisability of limiting the institutions from which such Bachelor's degree may be accepted; (2) that some plan be adopted to assist small institutions in raising to the proper standard such of their work as they have the financial and other means to carry on; (3) that the Conference consider itself a section of a general organization of the same institutions, having also separate sections in all the learned professions, including the technical sciences, and that steps be taken for the organization of the other sections; (4) that steps be taken to secure federal or uniform state legislation for the upholding of the standard of the various professions; (5) that the Association of American Universities be officially represented at the Congress of Education to be held at Paris in connection with the World's Fair.

The meeting adjourned without day.

2:30 P. M.—The THIRD SESSION was called to order in the University Rooms of the Fine Arts Building at 2:30 P. M., Wednesday, February 28, 1900, with Mr. Eliot in the chair.

The session was occupied with general expression of opinions and discussion of topics of interest concerning graduate study.

(A detailed record of the proceedings was not kept.)

MEETING OF EXECUTIVE COMMITTEE

THURSDAY, MARCH 1, 1900

MINUTES

1 P. M.—The first meeting of the Executive Committee of the Association of American Universities was called to order at 1 P. M., Thursday, March 1, 1900, at the Chicago Club, with Mr. Eliot, of Harvard University, in the chair.

There were present Mr. Charles William Eliot, of Harvard University, Chairman; Mr. Benjamin Ide Wheeler, of the University of California; Mr. Ira Remsen, of the Johns Hopkins University; Mr. Nicholas Murray Butler, of Columbia University; and Mr. William Rainey Harper, of the University of Chicago, Secretary.

The Secretary was authorized to send a statement concerning the organization of the Association and a copy of its By-Laws to each university in the Association and to secure formal acceptance of membership.

It was voted that the Second Annual Conference be held in Chicago at the time of the Superintendents' meeting.

It was voted that the meeting should not include more than four sessions.

It was voted that each university be asked to suggest topics for discussion.

The following topics were proposed:

“Migration.”

“Fellowships.”

“Subordinate Requirements for the Doctor's Degree.”

“The Printing of Dissertations.”

It was voted that the Chairman of the Executive Committee be authorized to appoint some person to prepare a statement of facts concerning each topic to be discussed.

It was voted that one topic should be taken up for discussion at each session.

It was voted that the Association should not appoint a representative for the Paris Exposition.

It was voted that the Association should not undertake at present to secure legislation with reference to the protection of higher degrees.

It was voted to give to the Federation of Graduate Clubs an opportunity to present statements in writing on the topics discussed in the Association.

The committee adjourned, to meet at the call of the Chairman.

OFFICIAL ACCEPTANCES OF MEMBERSHIP

In accordance with the action of the Executive Committee of the Association, taken at a meeting held March 1, 1900, the Secretary prepared a letter setting forth the details of the organization and actions of the first meeting and the proposition for a permanent organization. A copy of this letter, accompanied by a copy of the Constitution of the Association, was sent to each of the fourteen universities, with a request that official acceptance of membership in the Association be voted by the appropriate ruling body.

In pursuance of this request, the several universities indicated their official acceptance of membership in the Association in the following order:

The University of Chicago	- - - - -	March 6, 1900
University of California	- - - - -	March 19, 1900
University of Wisconsin	- - - - -	March 20, 1900
Yale University	- - - - -	March 22, 1900
Princeton University	- - - - -	March 30, 1900
The Leland Stanford, Jr., University	- - - - -	April 9, 1900
Clark University	- - - - -	May 1, 1900
Columbia University	- - - - -	May 8, 1900
Catholic University of America	- - - - -	June 12, 1900
University of Michigan	- - - - -	October 11, 1900
Harvard University	- - - - -	October 30, 1900
Cornell University	- - - - -	October 31, 1900
The Johns Hopkins University	- - - - -	November 1, 1900
University of Pennsylvania	- - - - -	November 2, 1900

THE SECOND ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

TUESDAY, FEBRUARY 26, 1901

MINUTES

1 P. M.—The members of the Association, upon invitation of Mr. Harper, took luncheon at the Quadrangle Club.

2:30 P. M.—The FIRST SESSION was called to order in Haskell Assembly Hall at 2:30 P. M., with Mr. Briggs, of Harvard University, in the chair.

The following representatives of the universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Irving Stringham, Mr. Armin Otto Leuschner.

CATHOLIC UNIVERSITY OF AMERICA—Mr. Thomas J. Conaty, Mr. Edward A. Pace, Mr. Daniel W. Shea.

THE UNIVERSITY OF CHICAGO—Mr. William Rainey Harper, Mr. Harry Pratt Judson, Mr. William Gardner Hale, Mr. Rollin D. Salisbury, Mr. Starr Willard Cutting.

CLARK UNIVERSITY—Mr. G. Stanley Hall.

COLUMBIA UNIVERSITY—Mr. Nicholas Murray Butler.

CORNELL UNIVERSITY—Mr. Thomas F. Crane.

HARVARD UNIVERSITY—Mr. Le Baron R. Briggs.

THE JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen.

THE LELAND STANFORD, JR., UNIVERSITY—Mr. John C. Branner.

UNIVERSITY OF MICHIGAN—Mr. James B. Angell.

UNIVERSITY OF PENNSYLVANIA—Mr. William Romaine Newbold.

PRINCETON UNIVERSITY—Mr. William Francis Magie.

UNIVERSITY OF WISCONSIN—Mr. Charles Forster Smith, Mr. Edward Asahel Birge.

YALE UNIVERSITY—Mr. Arthur Twining Hadley.

Mr. Magie, of Princeton University, suggested that the minutes be kept only in brief form.

Mr. Leuschner, of the University of California, was requested to prepare the report of the meeting for the press.

The question of the approval of New York University as a member of the Association was referred to the Executive Committee.

The invitation of the University Club to a banquet in honor of the delegates was accepted with thanks.

The Chairman was authorized to appoint a Committee on Nomination of Officers for the ensuing year. The Chair appointed as such Committee:

Mr. Judson, of the University of Chicago.

Mr. Shea, of the Catholic University of America.

Mr. Smith, of the University of Wisconsin.

It was voted that reports of the Executive and Nominating Committees be received after the regular program on Wednesday afternoon.

Mr. Butler, of Columbia University, presented a request from various learned societies respecting the setting aside of a "Convocation Week" for the meeting of such societies. The request, upon motion of Mr. Remsen, of the Johns Hopkins University, was referred to the Executive Committee.

Mr. Remsen, of the Johns Hopkins University, then presented a PAPER ON "Migration among Graduate Students."

The DISCUSSION which followed the reading of the paper was participated in by Mr. Hall, of Clark University; Mr. Harper, of the University of Chicago; Mr. Butler, of Columbia University; Mr. Newbold, of the University of Pennsylvania; Mr. Crane, of Cornell University; Mr. Smith, of the University of Wisconsin; Mr. Stringham, of the University of California; Mr. Conaty, of the Catholic University of America; Mr. Shea, of the Catholic University of America; Mr. Judson, of the University of Chicago; and Mr. Briggs, of Harvard University.

It was voted to appoint a Committee of One to secure the statistics relating to migration of American students in American and German universities.

The President of the Association appointed Mr. Edward A. Birge, Ph.D., Sc.D., Dean of the College of Letters and Science in the University of Wisconsin.

5:30 P. M.—The EXECUTIVE COMMITTEE MEETING.—A meeting of the Executive Committee of the Association was held Tuesday afternoon, February 26, 1901.

The meeting was called to order at 5:30 P. M.

It was voted, in reference to the application of New York University for membership in the Association, that at this time the Executive Committee is not ready to recommend the extension of the membership of the Association.

A communication was presented with reference to the proposed "Convocation Week." It was recommended that the Association approve the suggestion of the Council of the American Association for the Advancement of Science that a Convocation Week be set apart other than during the summer vacation for the annual meetings of the several learned societies.

SECOND DAY'S PROCEEDINGS

WEDNESDAY, FEBRUARY 27, 1901

MINUTES

10 A. M.—The SECOND SESSION was called to order in the University Rooms of the Fine Arts Building at 10:13 A. M., with Mr. Briggs, of Harvard University, in the chair.

A communication from Mr. Leuschner, temporary Secretary, was received and referred to the Executive Committee,

Mr. Magie, of Princeton University, then presented a PAPER on "The Type of Examination for the Doctor's Degree."

The DISCUSSION which followed the reading of the paper was participated in by Mr. Newbold, of the University of Pennsylvania; Mr. Remsen, of the Johns Hopkins University; Mr. Angell, of the University of Michigan; Mr. Birge, of the University of Wisconsin; Mr. Briggs, of Harvard University; Mr. Leuschner, of the University of California; Mr. Stringham, of the University of California; Mr. Smith, of the University of Wisconsin; Mr. Pace, of the Catholic University of America; Mr. Crane, of Cornell University; Mr. Magie, of Princeton University.

2:30 P. M.—The THIRD SESSION was called to order in the University Rooms of the Fine Arts Building at 2:30 P. M.

The Committee on Nominations reported as follows:

For *President*—The representative of Columbia University.

For *Vice-President*—The representative of the University of Michigan.

For *Secretary*—The representative of the University of Chicago.

For additional members of the *Executive Committee*—The representative of the University of California; the representative of Harvard University.

Upon motion, the Association authorized the publication of the Proceedings, beginning with the organization of the Association.

It was voted that the expenses of the meeting and of the publication of the Proceedings be divided among the universities represented.

It was voted that it is not desirable at present to interpret the words "graduate study."

It was voted to refer the date and place of the next meeting to the Executive Committee.

A communication was read from the President of the Federation of Graduate Clubs, thanking the Association for the privilege of submitting expressions of opinion.

Mr. Judson, of the University of Chicago, then presented a PAPER on "Fellowships."

The DISCUSSION which followed the reading of the paper was participated in by Mr. Butler, of Columbia University; Mr. Remsen, of the Johns Hopkins University; Mr. Newbold, of the University of Pennsylvania; Mr. Birge, of the University of Wisconsin; Mr. Hall, of Clark University; Mr. Crane, of Cornell University; Mr. Stringham, of the University of California; Mr. Magie, of Princeton University; and Mr. Briggs, of Harvard University.

7 P. M.—A DINNER in honor of the delegates to the Second Annual Conference of the Association of American Universities was given by the University Club of Chicago at the Club House, 115 Dearborn street, Chicago, Ill.

The following were the guests of the occasion: Professor Armin Otto Leuschner and Professor Irving Stringham, of the University of California; Right Rev. Monsignor Conaty, of the Catholic University of America; Rev. Edward A. Pace and Dr. Daniel W. Shea, of the Catholic University of America; President William Rainey Harper, Professors Harry Pratt Judson, Rollin D. Salisbury, William Gardner Hale, and Starr Willard Cutting, of the University of Chicago; President G. Stanley Hall, of Clark University; Professor Nicholas Murray Butler, of Columbia University, Professor Thomas F. Crane, of Cornell University; Professor Le Baron R. Briggs, of Harvard University; President James B. Angell, of the University of Michigan; Professor William R. Newbold, of the University of Pennsylvania; Professor William F. Magie, of Princeton University; Professor John C. Branner, Vice-President of the Leland Stanford, Jr., University; Professor E. A. Birge, acting President of the University of Wisconsin; Professor Charles Forster Smith, of the University of Wisconsin; and President Arthur T. Hadley, of Yale University.

Mr. David B. Jones, President of the University Club, acted as toastmaster. The following toasts were responded to:

"Special Training for Consular and Diplomatic Service," by President James B. Angell, of the University of Michigan.

"The Three-Year College Course," by Professor Le Baron R. Briggs, Dean of Harvard College.

"Freedom of Speech in University Circles," by Vice-President John C. Branner, of the Leland Stanford, Jr., University.

"Will College Class Feeling and Organization Some Time Disappear in Our Colleges?" by President Arthur T. Hadley, of Yale University.¹

"Religion and Science," by Right Rev. Monsignor Conaty, Rector of the Catholic University of America.

"Shall Professional Schools Require for Admission the Bachelor's Degree?" by Professor Ira Remsen, of the Johns Hopkins University.

"University Possibilities at Washington," by Professor Nicholas Murray Butler, of Columbia University.

¹ This toast was omitted.

THIRD DAY'S PROCEEDINGS

THURSDAY, FEBRUARY 28, 1901

MINUTES

10 A. M.—The FOURTH SESSION was called to order in the University Rooms of the Fine Arts Building at 10 A. M., with Mr. Briggs, of Harvard University, in the chair.

It was moved by Mr. Newbold, of the University of Pennsylvania—

That the Executive Committee be requested to propose a definite policy with reference to the attitude of this Association toward the admission of other institutions, and to submit an outline of such policy to this Association at its next meeting for consideration. That this outline be also submitted to the several institutions represented thirty days before the next meeting, if possible.

The motion was amended, upon motion of Mr. Remsen, of the John Hopkins University, to read as follows:

That the Executive Committee be requested to report to this Association at its next meeting upon the desirability of forming a definite policy with reference to the attitude of this Association toward the admission of other institutions, and, if the Executive Committee deems it wise to formulate such a policy, that it submit an outline thereof to this Association at its next meeting for consideration. Further, that this outline be also submitted to the several institutions represented thirty days before the next meeting, if possible.

The motion was debated by Mr. Remsen, of the Johns Hopkins University; Mr. Stringham, of the University of California; Mr. Leuschner, of the University of California; Mr. Newbold, of the University of Pennsylvania; and Mr. Magie, of Princeton University. The motion was lost.

It was moved by the representative from the University of California that the following resolution be adopted:

That the Executive Committee request the members of the Association to send to the committee nominations to membership in the Association; and that the committee report to the members of the Association at least thirty days before the annual meeting the names of those institutions which the committee is ready to recommend for admission to the Association.

The motion as amended, upon motion of Mr. Magie, of Princeton University, was as follows:

Resolved, That the Executive Committee shall invite from the universities representing the Association nominations of new members. At least one month before each annual meeting such nominations shall be communicated to the members of the Association. The

proper authorities of the universities composing the Association shall be requested to instruct their delegates with a vote on each university approved for membership by the Executive Committee.

The chairman read a communication from the Federation of Graduate Clubs:

There are several matters to which I, as President of the Federation of Graduate Clubs, should like to have you call the attention of the Chicago meeting, if opportunity offers.

As to the "Migration of Graduate Students," the Federation has had from year to year a standing committee to investigate and report on this subject at its annual conventions. As a result, in New York city, a year ago last December, the Federation in convention adopted the following resolution :

"WHEREAS, The Federation is in favor of facilitating the migration of graduate students, be it

"Resolved, The Federation recommends the adoption of a uniform course-book by all universities (similar to the German *Anmeldungsbuch*)."

Similarly the conventions of the Federation have discussed the "Doctorate Degree."

The fourth annual convention (1898) resolved:

"The Federation is most strongly opposed to the honorary Ph.D."

And the next year at New York city:

"WHEREAS, The Federation favors a uniformly high standard for the Ph.D. degree, be it

"Resolved, The Federation recommends three years as the minimum time of graduate study for the doctorate degree."

The New York convention also took the following action with regard to the printing of Ph.D. theses :

"WHEREAS, The maintenance of the standard of requirements for the degree of Doctor of Philosophy is largely dependent upon publicity given to the thesis accepted for that degree; and

"WHEREAS, The withholding of theses from publication deprives scholars of the benefits which they might derive from them, and may lead to wasteful repetition of work already done;

"Therefore, The Federation of Graduate Clubs urges upon all universities the adoption of a rule for the publication of all theses accepted from candidates for the Ph.D. degree."

The Chicago convention (1897) passed a similar resolution, to wit:

"Resolved, That the Federation of Graduate Clubs recommend that the universities granting the Ph.D. degree should undertake the expense of printing the doctorate thesis."

Only once has the question of "Fellowships" been up for discussion before the Federation. And in that discussion the delegates were unanimously of the opinion that fellowships should be given *only* to men of marked ability and attainment.

There is one additional matter which may be of interest to the Chicago meeting. At the recent Federation convention at Philadelphia (December 26, 27, and 28) a Publication Committee was appointed to launch a *Graduate Students' Magazine*. It is to be the official organ of the Federation (taking the place of the *Handbook*), and is to serve as a medium of communication among all those interested in graduate instruction, graduate study, and higher

education in general. It is to appear bi-monthly, and will contain, among other things: reports of the proceedings of the Federation conventions, discussions of important questions by students and teachers, a series of papers on the history of graduate instruction, records of work doing and being done at the various universities, short categorical reviews of Ph.D. theses, personal items, foreign notes, library notes, and such information as would be of interest to all those engaged in higher education.

Mr. Gaston, President of the Federation for 1899-1900, recently wrote me that the Association of College Presidents cordially invited the President of the Federation to attend the meeting in Chicago the 22d of this month. I wish you would be so kind as to express to the proper authority my regrets at not being able to take advantage of the Association's good invitation. I am very grateful for the courtesy and consideration of the Association in inviting the Federation to send a representative.

Sincerely yours,
J. H. PATTEN.

N. B.—I might add that the Federation claims to represent the graduate students of twenty-seven universities.

The communication was accepted, and the chairman was requested to acknowledge it.

It was moved by Mr. Magie, of Princeton University, that copies of the communication from the Federation of Graduate Clubs be sent by the Secretary to each of the universities in the Association.

Mr. Newbold, of the University of Pennsylvania, then presented a PAPER ON "To What Extent Should a Candidate for the Doctor's Degree Be Required to Show a Knowledge of Subjects Not Immediately Connected with His Major Subject?"

The DISCUSSION which followed the reading of the paper was participated in by Mr. Smith, of the University of Wisconsin; Mr. Briggs, of Harvard University; Mr. Pace, of the Catholic University of America; Mr. Stringham, of the University of California; and Mr. Magie, of Princeton University.

The thanks of the Association were extended to the University of Chicago and to the University Club of Chicago.

At 12:40 P. M. the Association adjourned *sine die*.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE SECOND ANNUAL CONFERENCE

THE FIRST SESSION

THE MIGRATION OF GRADUATE STUDENTS

PAPER READ BY MR. IRA REMSEN, OF THE JOHNS HOPKINS UNIVERSITY

[ABSTRACT]

Assuming that the general conditions existing in a number of universities are favorable to graduate work, it seems evident that it would be a good thing for a student to divide his time between two or three of these. The chief advantage would be the broadening effect of coming in contact with more than one leader in the principal subject followed. No two teachers look at the same subject from exactly the same point of view, and it is right that the student should have the opportunity to get more than a one-sided view of his subject. In Germany there used to be a good deal of migration, and I believe that it is still recognized as desirable. So far as I know, it does not play an important part in university training in England or in France.

In this discussion the term "migration" is restricted to the movement of graduate students from one university to another after having begun their graduate work. There is some migration, but there does not appear to be much. Students now move from one university to another during their graduate courses for three reasons:

1. The student may be dissatisfied with the work he is doing and wish for a change.
2. The university authorities may be dissatisfied with the student, and may make migration easy for him—may even advise it.
3. The university authorities and the student may be mutually satisfied, but both may agree that it would be well for the student to go elsewhere for the purpose of working under certain other teachers.

Only that kind of migration that is referred to under the third head need be considered; and the question now is: Does this kind of migration play an important part in our universities at present? I think it does not. But, of course, I can only

speak from my own experience. In the twenty-five years that I have had to make observations in this line not more than half a dozen graduate students of chemistry, out of several hundred, have come to me who have previously been graduate students of chemistry elsewhere, and I do not think that any one of these had been advised by his teachers to come. On the other hand, during that time I have never advised more than half a dozen to go elsewhere, and then there were special reasons that led me to do so. The experience of my colleagues has been about the same. I can therefore only repeat that, while migration is a good thing, its advantages have not yet come to be so clearly recognized that students take advantage of it to any great extent.

The reasons for this are clear:

1. In the first place, the traditions of our educational institutions are against it. Our traditions have, to be sure, been established in connection with our colleges, which remain the most influential educational institutions of the country. As migration has not played an important part in college life, it is not likely at once to be adopted in university life.

2. Then that spirit of loyalty which has taken such hold of our college students has also affected our university students.¹ While this may be objectionable from some points of view, it is difficult to see how it can be avoided; and, if it exists, it plainly stands in the way of migration.

3. More serious than either of the above is the difficulty of adjusting the work done in one university with that to be done in another. The regulations of different universities covering the awarding of the degree of Doctor of Philosophy are by no means the same. In principle perhaps they are, but in details they are not, and it is often just these details that cause the trouble. The farther the student has advanced, the more difficult it becomes to make the change. After he has begun his dissertation work, especially in the experimental sciences, it is almost impossible to go elsewhere without losing time, and time with graduate students, in this country at least, is of prime importance.

4. Efforts are being made by many universities to increase the number of graduate students in attendance. It is an unfortunate fact, but it is a fact nevertheless, that many of the universities are vying with one another in their efforts to induce graduate students to come to them. Advertising, free tuition, scholarships, and fellowships are made use of for this purpose. No one can deny this statement who is at all familiar with the universities of this country. It is obvious that this is at least not in the interest of healthy migration.

I have thought it best in what I have said to keep to the facts, and not to allow my desire for an earthly paradise to blind me to the actual conditions. If we are on

¹ This statement was received with surprise at the Conference. After my return to Baltimore I consulted my colleagues, and they fully agreed with me.

the wrong track now, we shall not be likely to get on the right one by imagining that the conditions that surround us are the ideal ones.

Are we now in the habit of advising our best students to leave us and to go elsewhere? I do not ask whether this is ever done; I ask whether this is customary. If it is, then migration is in a healthy state, and requires no further discussion.

In what I have said I do not wish to be understood as being in the least opposed to migration. I wish it were realizable, and I hope that all university teachers will do what they can to make migration more common than it now is.

DISCUSSION ON "THE MIGRATION OF GRADUATE STUDENTS"

[ABSTRACT]

MR. HALL, OF CLARK UNIVERSITY:

I understand that Professor Remsen favors migration, but thinks it rather hopeless. This view seems to me sad, if not pessimistic. Moreover, if not prevalent among the students at Johns Hopkins, migration is already hopefully begun in many other places. Whatever may be said of undergraduates, the graduate student should carefully compare institutions and be free to choose that university and those professors likely to do most for him in his own special work. If fellowships are, as President Eliot conceived and defined them years ago in an address at Baltimore, "paying students to come," or if they be used as an inducement to remain, they work viciously against the highest interests of not only the student, but the university itself. They deprive the professor of a legitimate and noble emulation to win young disciples on his merits. If properly operative, graduate migration would have some of the same beneficial effect for institutions that the elective system had when first introduced for professors and departments in the same university. The inert routine instructors found their class-rooms depleted, while the energetic and progressive men found theirs filling up. Everywhere one of the best results of electives has been upon the professors. Stipends can be used to shelter instructors against the working of the natural law of selection and the survival of the fittest. This has the same effect here as in biology, where it causes degeneration and eventually tends to parasitism. Now, the correspondence of every university office probably reveals cases of intending students who state that they would prefer for all reasons connected with their work to attend that institution, but, as they are more or less dependent upon stipends, have to follow the largest prize, and go elsewhere. This, in my opinion, is the chief deterrent in the natural operation of a beneficent law, and is the only ground I can see for hopelessness. On the other hand, we often observe cases where a professor has won just and high distinction in a special department of his own field, and the able student, who is in earnest with his work and has intelligence to discriminate, is ready to forfeit the prize and follow his own higher interests. In my opinion, the number of this latter class of students is growing. At Clark we have often advised excellent men, whom we had every selfish reason to retain, to go elsewhere. The field of university work is very wide, and the leading teachers in each place are usually at best authorities only in some special part of their field. I conceive that professors are now called to rise above local

feeling, and that honor and honesty and the just rights of the student require heads of departments actively to interest themselves in placing men whom they know in the institutions where they will derive the greatest benefit, and to rise above all inter-institutional or collegial rivalry to do this. Moreover, this is the best policy in the long run, for each institution that has merit will not only not diminish in numbers, but, by placing each man before the fittest crib, will increase the efficiency and elevate the standard of each department. This is an economy greatly to be desired.

MR. BUTLER, OF COLUMBIA UNIVERSITY:

The facts as they are disclosed by the records of Columbia University show that a very large proportion of the best graduate students there, including those who received fellowships and who proceeded to the Doctor's degree, divide their period of graduate study between at least two universities. I think that the extent of migration is much greater than Professor Remsen realizes, and that the tendency among university professors to promote it, in the interests of the students, is marked.

The policy of the Division of Philosophy and Psychology at Columbia is to advise students to go for at least a portion of their period of university residence to particular teachers and institutions. The universities of Berlin, Bonn, and Oxford, and, in the United States, Harvard and the University of California, are institutions which certain graduate students of philosophy and psychology at Columbia have been advised to attend, because of the fact that the instruction and guidance offered at those institutions would best serve their needs. I think that facts of this kind are not at all uncommon either in other departments at Columbia or in other universities than Columbia.

I would emphasize the importance of migration as an influence tending to overcome departmental and university isolation and antagonism, which I regard as one of the greatest limitations upon the effectiveness of higher education in the United States.

MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:

Pennsylvania's experience tends to substantiate the position taken by President Hall, President Harper, and Dean Butler, rather than that of Professor Remsen. It led to the conclusions that migration is at the present time a marked feature of graduate work; that it is daily becoming more marked; that fellowships have been and are an important factor in encouraging migration; and that the tendency on the part of graduate teachers to advise their students to go elsewhere for certain portions of their graduate work is becoming more and more noteworthy. If it were clearly understood that the acceptance of a fellowship carried with it no obligation to take a degree from the institution granting the fellowship, there would remain no ground for regarding fellowships as a means of hindering migration.

MR. MAGIE, OF PRINCETON UNIVERSITY:

Princeton University requires generally one year's residence in Princeton of candidates for the Doctor's degrees, but a properly recommended candidate who had worked only at other universities would probably not be refused examination. We believe that migration should be made easy by the adoption of a practically uniform method of giving the Doctor's degrees, and especially by allowing the candidate to come up for his degree after a sufficient university residence, without requiring him to take any set number of courses or to pursue any prescribed course of study.

MR. CRANE, OF CORNELL UNIVERSITY:

There has always been a large amount of migration among the graduate students at Cornell. To begin with, a very considerable number of graduate students have received their first degree at some other college than Cornell. During the past thirteen years 1,046 graduates of 173 institutions have been admitted to graduate work. Of these 433 were graduates of Cornell. Of course, not all of these were candidates for the Doctor's degree, but since 1893 the candidates for that degree have averaged, including the candidates for D.Sc., no longer conferred, about one hundred each year.

It is impossible for me to say what proportion of these have pursued their studies at other institutions before taking their degree at Cornell, but the number is considerable. A certain number pursue studies abroad for one or more years, either on fellowships or otherwise; a certain number begin their advanced studies at other American universities; and, finally, a certain number, after pursuing their work at Cornell for a time, take their degree at other institutions, either in this country or abroad.

No serious difficulties are experienced in this migration of advanced students. A general committee admits to the graduate department those holding a first degree equivalent to that of Cornell. In most cases admission follows as a matter of course. The question of the candidate's fitness to pursue a certain course of study is settled between him and the professors constituting his special committee, or the professors with whom he wishes to take a part of his work. I think I may say that no considerable difficulty is encountered in admission or arrangement of work either as regards candidates for the doctorate who begin their advanced work here or those who continue it here from some other university.

As regards the general question, "migration" is certainly encouraged. In certain departments study at a foreign university, or the use of materials to be found only abroad, is almost indispensable, while certain universities in this country afford advantages which others do not enjoy, either the presence of great teachers in special branches or exceptional equipment, etc. I am sure no professor would hesitate to recommend his advanced students to spend a part of their time at any other university in this country or abroad which offered superior advantages, and such recommendations are made and followed from time to time.

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN:

Fellowships are perhaps the chief cause of migration to Wisconsin, and certainly from us. These bring a desirable element from other quarters, *e. g.*, from eastern universities, giving us a welcome opportunity to form an estimate of the character of graduate instruction elsewhere, and enabling eastern students and universities to become acquainted with our ideals and practice. Not a few of the candidates for fellowships and graduate scholarships apply on the recommendation of leading scholars elsewhere, who wish their pupils to study with certain men in Wisconsin. While perhaps, as a rule, we are not sufficiently virtuous and disinterested to advise our best graduate students to go elsewhere, yet I know of cases where very able graduates of ours have been so advised, and I myself have within the past month given just that advice to the ablest classical graduate student whom I have had in Wisconsin. It is, further, a common remark among Wisconsin professors that a student ought not to take his whole undergraduate and graduate course at one institution. So it may

be said that Wisconsin University favors "migration among graduate students;" certainly in theory, and to a reasonable degree also in practice.

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

The conditions in California are favorable to migration, both graduate and undergraduate. Hitherto we have sent more graduate students to other institutions than we have drawn to ourselves, but at the present moment undergraduates in considerable numbers are coming to California from all parts of the United States, and, in fact, from many countries, and the number of graduate students who have taken their Bachelor's degrees in other institutions is increasing. In particular, there is free movement of graduate students from California to Stanford, and *vice versa*. With us, therefore, the migration of students is already a live question. At the present time we have representatives from one department (mathematics) studying at Göttingen, at Zürich (two students), at Harvard, and at Chicago, and these young men have gone away from us in response to our urgent advice. Whatever personal interests our professors may have in this matter, I think they are willing to waive them in the interests of higher scholarship. We desire to take the large view of this question.

MR. CONATY, OF THE CATHOLIC UNIVERSITY OF AMERICA:

The migration of students is a matter that has interested the Catholic University of America almost from its beginning. It has encouraged students to go to other universities in America and Europe, where there are superior opportunities for certain lines of work, and it has aided some of these students with fellowships and stipends. Its experience is that such migration is productive of good results.

The migration of professors is a matter in which the university takes an active interest also. One of its professors gave a course of lectures at the University of Pennsylvania last year, thus supplying the work of one of the professors of that university who was on leave of absence. It has recently invited one of the instructors at Harvard University to come to Washington to give a course of lectures, in order that the work of a professor, now on leave of absence, might be in part supplied thereby.

MR. SHEA, OF THE CATHOLIC UNIVERSITY OF AMERICA:

Migration of students in Germany, while extensive, is not so great as is commonly supposed, and the tendency among those who are really determined to win a degree is rather to remain at one institution, if the facilities are sufficient.

MR. JUDSON, OF THE UNIVERSITY OF CHICAGO:

In connection with the general subject of the migration of graduate students I wish to call attention briefly to another matter which, while different, is yet, in my opinion, closely connected with the main subject. I refer to what I may call "the migration of professors."

It has, of late, become increasingly common for one university to arrange with another for a temporary exchange of members of the faculty. During the past year the University of Chicago, by the courtesy of the Board of Regents of the University of Wisconsin, was favored with the aid of Professor Frederick J. Turner in the Department of History, to supply a temporary vacancy caused by the illness of Professor von Holst. By like courtesy of the Regents of the University of Michigan, we are favored this year with the aid of Professor Andrew C. McLaughlin.

One of our own staff is at present spending a year in the service of the University of California at Berkeley. The University of Wisconsin also last year, I believe, loaned one of its History Department to Harvard University.

I speak of these merely as instances which occur to me at the moment, and I am sure that those present will at once think of a number of others.

This is not merely a matter of the convenience of individual professors; it has also the further advantage of giving to students of different institutions the different methods and the different points of view of other institutions.

Considering, then, university migration, we should take into account, it seems to me, not merely the transfer of students from one institution to another, but also the occasional, and perhaps increasingly frequent, temporary transfer of members of the faculty.

MR. BRIGGS, OF HARVARD UNIVERSITY:

The Dean of the Graduate School has written to me about "migration." "We think this an excellent practice," he says, "but we feel it necessary to insist that students who come to us from other graduate departments should bring a satisfactory record from their principal instructors of the work done by them, if such work is to count in any way for our higher degrees. We believe that this migration is useful, not only to the men themselves, but in its effects in developing the spirit of coöperation between different universities."

The fact that Harvard University does not discourage migration to Harvard University may be seen from the announcement in the University Catalogue that *one* year of the term of study for the Doctor's degree must be spent in residence at Harvard University. The one year required at Harvard University must be the last year. The minimum time of study for the Doctor's degree is two years after the receipt of the A. B.; but most persons are expected to study longer. To me the greatest difficulty in migration is the difficulty which I think no one has yet distinctly mentioned — the delay in a student's adjustment to new surroundings when he is in the midst of a long piece of work. Whether he is conducting an investigation in a laboratory or library, or writing a long thesis, he is almost necessarily held back for a time while accustoming himself to new conditions of work, and perhaps to new theories on the part of his teachers. How far this delay goes toward counteracting the excellent effects of migration is hard to judge in any general way, but must often be worth considering.

THE SECOND SESSION

THE TYPE OF EXAMINATION FOR THE DOCTOR'S DEGREE

PAPER READ BY MR. WILLIAM FRANCIS MAGIE, OF PRINCETON UNIVERSITY

[ABSTRACT]

The Doctor's degree has a meaning, introduced by us from Germany, and to be borne in mind in any discussion of the tests by which a candidate for the degree is tried. It means that its possessor is able to do original work in at least one great

field of study, and to supervise and criticise the work of others in that field. The particular service of the examination is to test the candidate's general knowledge of his main subject (the minute knowledge of some part of it being already shown by his thesis) and of the subsidiary subjects which he offers in addition.

The main types of examination now prevalent in this country are :

1. One, similar to the type universal in Germany, in which the examinations are held all on the same day, are conducted orally, and cover *subjects* of considerable content, like Latin, psychology, physics, etc.

2. One in which the examinations are held on different days, are conducted in writing, and sometimes, at least, cover definite books or courses of lectures.

3. One in which the examinations are held on courses as soon as the courses are ended, the requirements being satisfied when a sufficient number of such courses have been taken.

To decide which of these types is best adapted to secure that the candidate is fitted to receive the Doctor's degree, it is necessary to determine exactly what that degree implies. It implies that the candidate is a man of some original power, and, as to his knowledge, it implies that he knows enough to be a teacher and an investigator of his subject; but the knowledge required is general rather than minute; a knowledge of the sources of information rather than of all that is given by those sources; a knowledge of methods rather than of all that may have been done by those methods. The candidate is presumably a young man of fine intelligence and industry; and there should be expected of him the kind of knowledge that such a man, who has studied honestly on a special subject for three or more years without cramming, may fairly acquire, but no more.

If this is true, it follows that the oral examinations on subjects furnish an adequate test of the candidate's fitness for the Doctor's degree. Being on subjects, these examinations discourage cramming and lead the student to a broad and scholarly treatment of his subjects during his years of preparation. He is encouraged to study in the way in which he will study in after-life, and to acquire that general knowledge which will be the best possible foundation for successful work in the future. And these examinations, being oral, discourage special preparation for them by the examiner, and put the examination, so far as may be, on the plane of a learned conversation. It is perfectly possible, as experience has shown, for an examiner to discover, by such an oral examination, whether the candidate has such knowledge as fits him to receive the Doctor's degree. The flexible nature of an oral examination makes it easy to give a mark of special distinction to the candidate on the ground of his acquaintance with his subjects being more extensive than that required of a candidate who passes without distinction.

The examinations of the second type have the disadvantage that they are likely

to go into the details of a subject with unnecessary particularity, and thus either to be unfairly difficult or to encourage the practice of cramming. They gain nothing which cannot be equally well attained by the oral examination.

Little or nothing can be said in favor of the third type, and it need not be noticed further.

Examinations on subjects of the first type will facilitate the migration of graduate students from one university to another, and may ultimately make it possible for a student to take his degree at one university, while his preparation has been made at another.

DISCUSSION ON "THE TYPE OF EXAMINATION FOR THE DOCTOR'S DEGREE"

[ABSTRACT]

MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:

The whole question as to what examinations should be required for the Doctor's degree has recently been very carefully discussed by the Faculty of Philosophy of the University of Pennsylvania, and the faculty has reached certain conclusions which I should like to put before the Association.

From 1882 to 1896 candidates for the Doctor's degree were examined orally by a committee of three members of the faculty appointed by the Dean. These examinations were public. In the course of time it was found that few members of the faculty except those on the committee ever came to the examinations. In consequence the examination was conducted by three men who were already thoroughly acquainted with the candidate's merits by virtue of three, four, or five years of intimate association with him. They were usually entirely satisfied as to his fitness for the degree before the examination began, and experience had proved that they were in many cases unwilling to change that opinion if the results of the two hours' oral examination were not quite as good as they had expected. Their unwillingness was often due to their conviction that the candidate's nervousness had made it impossible for him to do himself justice.

In 1896 the faculty prescribed written examinations in addition to the oral examination for all candidates for the higher degrees. The immediate effect was a further depreciation in the value attached to the oral examination. The written examinations were more searching than the oral, were more prolonged, the candidate had a better opportunity to show what he could do, and the examiner could form a more just opinion of the candidate's achievements with the written material before him than he could from his unsupported recollection of two hours' close questioning.

When the question of making a change in the practice of the university was proposed in the spring of 1899, the faculty was practically unanimous in the opinion that the value of the written examinations had been sufficiently tested, and that they should be retained. With regard to the oral examination much difference of opinion existed. Nearly all were agreed that it was of little value as a test of the candidate's fitness, but many nevertheless

desired to retain it, partly from unwillingness to abolish so time-honored a custom, and partly from the feeling that the candidate should not proceed to his degree without some formal and public expression on the part of the faculty of its approval of his work. It was finally decided:

1. To retain the written examinations.

2. To substitute for the oral examination a formal presentation to the entire faculty. That on this occasion a written statement of the candidate's work, together with a written outline of his thesis, should be presented to the faculty, and that the faculty should vote upon the question of his acceptance or rejection. It was further provided that these written statements should be printed and published, and that the theses in all cases should be printed and published. The leading principles which governed the faculty in its decision were these:

(a) Explicit recognition of the fact that the development of specialization among the members of the teaching force makes it impossible for any of them to judge intelligently of a candidate's fitness except those whose work lies near the subject which he has chosen as a major.

(b) Formal recognition of the principle that the maximum degree of publicity is the best means of maintaining the standard.

These conclusions are not entirely consistent with those of Mr. Magie. We agree with Mr. Magie in what I understand to be the two main points upon which he laid emphasis: (1) that the examinations for the higher degrees should not be based upon courses; (2) that the examiner should not prepare his questions beforehand with the aid of printed text-books, thus expecting of the candidate more detailed knowledge than the examiner himself possesses. But I do not see that these faults are any more characteristic of written than of oral examinations.

MR. ANGELL, OF THE UNIVERSITY OF MICHIGAN:

I have heard with some surprise that at least one university conducts its examinations even for Doctors' degrees wholly in writing. It seems to me highly desirable that they should be conducted, at least in part, orally. Some gentlemen have reported that in certain cases worthy candidates, from stage-fright or lapse of memory, break down under oral examination.

If they do so, when in the hands of friendly and sympathetic examiners, as they usually are in our universities, the fact seems to me to indicate some serious defect in their training. I sometimes fear that we do permanent injury to students by conducting too many of their ordinary examinations in writing. They become unaccustomed to stand on their feet and give an account of themselves. Is it not a most valuable part of the education of a man to acquire the habit of reporting orally, when asked to do so, in concise and lucid English, on the results of his work? Every scholar should be able to take a view of his subject in its entirety and in its relations, and to show by his answers to good questions that he has thoroughly mastered it. He who as a Doctor is to teach should certainly be expected to do this. The examiners should of course know how, as sometimes I fear they do not, to ask proper questions with clearness and precision. But every candidate should be trained to answer such questions with reasonable promptness and accuracy. To a good examiner it seems to me the oral examination on many subjects furnishes a more satisfactory test than the written.

I should therefore deem it expedient to have at least a portion of the examinations conducted orally.

MR. BRIGGS, OF HARVARD UNIVERSITY :

Dean Wright, representing the Administrative Board of the Graduate School, says: "The usage at this university in the different departments is so various that it is impossible to lay down any details. We believe here that the Doctor should be master of some great field of learning, and that his examination for the Doctor's degree should be almost wholly within that field. We are not in favor of allowing candidates for the Doctor's degree to offer for the examination subjects that are not closely related to his field of learning. Within this field there are subjects enough; and the combinations will be different for different men."

"The degree of Doctor of Philosophy or of Science," says the University Catalogue, "is given, not for the mere reason of faithful study for a prescribed time or in fulfillment of a determinate program, and never for miscellaneous studies, but on the ground of long study and high attainment in a special branch of learning, manifested, not only by examinations, but by a thesis, which must be presented and accepted before the candidate is admitted to final examination, and must show an original treatment of a fitting subject, or give evidence of independent research."

So far as I know, our examinations for the Doctor's degree are entirely oral, except for the thesis and for such examinations as a candidate may have taken in the college courses which he chose as part of his work toward the Doctor's degree. A candidate for the Doctor's degree does not measure his work by courses; but he may take certain courses, including the examinations in them. The result of all his work is embodied in a thesis. He must, however, pass an oral examination conducted by what is called the "division" in which he is studying. Our teaching force is organized in divisions and departments, each division and each department having its own chairman. The Division of Ancient Languages, for example (Professor Goodwin, chairman), contains the Department of Indo-Iranian Languages (Professor Lanman, chairman) and the Department of the Classics (Professor Morgan, chairman); the Division of Modern Languages (Professor von Jagemann, chairman) contains the Department of English (Professor Wendell, chairman), the Department of Germanic Languages and Literatures (Professor Francke, chairman), and the Department of French and other Romance Languages and Literatures (Professor Grandgent, chairman). A candidate for the Doctor's degree in English is subjected to an oral examination, not by the Department in English only, but by the Division in Modern Languages; that is, by as many members of the division as care to come to the examination. As the division is very large, there is no difficulty in getting examiners enough. On the other hand, in smaller divisions, where there are very few instructors, men from outside whose scholarship in the subject is unquestioned may be called in to help the division.

The oral examination is a serious matter, and may touch any part either of the specific subject which the candidate has chosen for his thesis or of the general subject in which he is examined. A candidate in English, for example, may be asked a number of more or less general questions about a period of English literature remote from the period which his thesis concerns. It is entirely conceivable that in a doubtful case the oral examination should settle the question of the degree. The examination, though searching, is conducted sympathetically

enough to give the candidate an opportunity of recovering himself, if he is nervously confused at the start. Sometimes rather minute questions are asked in parts of the subjects not touched by the thesis, with the understanding that it is no discredit not to answer them, but is a credit to answer them. A candidate for the Doctor's degree may have explored corners of his subject which he cannot legitimately reach in his thesis. The close association of the candidate with one or two professors throughout his candidacy insures the conduct of the examination by someone who knows his habits of mind, and knows something of his general culture; for instance, in the Department of English—the department of which I see most—a candidate for the Doctor's degree works under the constant supervision of Professor Kittredge, spends whole mornings with him in discussion of matters connected with his thesis, and becomes intimately known to him. I believe that the oral examination is of real service, and may throw a good deal of light on the candidate's teaching capacity.

Those persons who have looked most carefully into the requirements for the Doctor's degree at Harvard University believe that the requirements are much more exacting than they ordinarily are in Germany for an American student who knows German. One evidence of this is in the men whom we see taking the Doctor's degree at German universities at least a year earlier than they could take it with us. Indeed, we see some men taking the Doctor's degree in Germany, and taking it in a limited time, when they would probably be quite unable to take it with us at all.

There is also danger that, in the desire to give a subject original treatment, a candidate for the Doctor's degree will advocate a theory of which its sole merit is its eccentricity. A Doctor of Philosophy, to be of use as a teacher of boys or of men, must be first and foremost a human being.

MR. LEUSCHNER, OF THE UNIVERSITY OF CALIFORNIA (in response to a call from President Angell for information concerning the procedure in German universities in recent years):

There appears to be no uniformity of conducting the examinations in different German universities, nor even in different departments of the same university. My own experience was somewhat out of the ordinary, and therefore does not entirely represent the general case, but I shall be glad to give it for what it is worth. I went to Europe, while on a year's leave of absence, after having completed in this country all the requirements for taking the Doctor's degree in the University of California, with the exception of having presented a dissertation. At Berlin, which university I had selected as offering the best opportunities in my chosen line, I was urged to go elsewhere for a Doctor's degree. The professors concerned were willing enough to have me become a candidate for the degree, but they contended that the regulation demanding the "triennium" in German universities would make it impossible for me to present myself at Berlin. Having decided to take my chances on this point, I took up my studies at Berlin and presented a dissertation to the dean, Dr. Dames, after about one year. The dean is not authorized to receive a dissertation unless accompanied by a certificate of the "triennium," but Dr. Dames, personally believing that an exception ought to be made in this particular case, desired to have the senate concur in refusing my application. The senate, however, on the urgent recommendation of the professors concerned, appointed a

committee to report on the thesis. The report being favorable, a "dispensation" from the "triennium" was secured from the *Cultusminister* and an oral examination granted.

I must admit that I had the good will of the leading Berlin astronomers through interchange of publications and other scientific intercourse. With reference to the examination I may say that, while it was searching and exhaustive, covering the whole field of astronomy, and several branches of higher mathematics, in addition to psychology, which latter is demanded from all students who do not offer history of philosophy, it involved no trick questions, and the questions could readily be answered by one who had taught most of the subjects for a number of years. At Berlin the candidate generally pays a formal call on his examiners a few days prior to the examinations, and he is frequently asked in what particular branch of his major and minor subjects he is most interested. The examiners are appointed by the dean, but generally the student's preferences are regarded. Frequently the examination is merely a matter of form. With reference to securing credit at Berlin as part of the "triennium" for work done at home, American students have the greatest difficulties. The individual professors, with many of whom I discussed the subject, were in favor of accepting residence at leading American institutions, but the senate can take no action without discriminating arbitrarily on the American institutions. I was told that the problem might be solved if we would give official information concerning the character of our graduate instruction. It will be remembered that the desire to secure such information from each other resulted in the first meeting of this Association.

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

The organization at California is in its early stages, but we have a method that is working fairly well. We are guided to a considerable extent by the practice in sister-universities. We do not pretend to set up a standard independently of other institutions. We aim at thoroughness, accuracy, publicity, and record. In order to bring about these ends, besides the usual safeguards of committees which report at frequent intervals upon the candidate's progress, we print a program of the examination, which is placed in the hands of the candidate at the examination and is distributed to those in attendance. The examination is public and oral. Printed invitations are issued by the committee that conducts the examination to such members of the university, both professors and graduate students, as are likely to be interested in the examination. The thesis and the examination upon those subjects that are involved in the thesis form the most important part of the test. The questions to be asked of the candidate are not printed in the program.

[NOTE: Specimen copies of some of the California programs were distributed to the delegates and elicited much interest.]

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN:

In the various departments examinations, generally written, are usually given at the conclusion of a course of lectures; the character and extent of such examinations, if given, being wholly a department affair. The departments concerned having satisfied themselves, by whatever tests they choose to require, of the candidate's fitness to come up for formal examination for the Doctor's degree, and the thesis having been completed and accepted, an oral examination is held by a committee appointed by the president, on the nomination of

the chairman of the Committee on Graduate Studies. This committee consists invariably of the professor in charge of the major subject, the other members being those with whom the candidate has had special work, and any members of the instructional force, but not students, are welcome to attend the examination. This examination is held upon *subjects* rather than upon special courses of lectures, or seminary exercises, or text-books that have been used; and greater stress is perhaps laid in general upon the candidate's familiarity with the great fundamental principles involved than with matters of detail. The examination lasts generally at least two hours, and is sometimes confined to the major and first minor, the department concerned occasionally allowing the second minor to be absolved by the written examinations already given. Sometimes a candidate, in the oral examination, has stage fright to such a degree that he fails to do himself justice, but the ability to state orally before a competent committee in clear terms what he knows is considered so important that, on the whole, an oral examination is deemed preferable to any other test. If the thesis already accepted is a work of high order, the candidate would probably not have failed on his oral examination.

'MR. HALL, OF CLARK UNIVERSITY:

My feeling is one of strong sympathy for Professor Magie's plea for oral examination. At Clark we lay great stress upon the thesis, which must be approved and printed, and hold one three-hour oral examination, in which often experts from other institutions are invited to participate. It makes a great difference how intimate the personal relations between the professors and the candidate have been during his post-graduate course. Perhaps it might be said that the smaller the institution or department, and the closer the personal relationship, the less stress need be laid upon the final examination. On the other hand, even with us, there are occasional surprises, and men do either better or worse than we expected. We admit no spectators and only the examiners, who cannot be less than four in number, but require at the beginning of the year of each candidate a careful oral examination in sight reading of French and German. Special reading is also marked out for the last year, and quite often other special tests are given by individual instructors. To my mind, three sessions of three hours each at a written examination is a great hardship upon the student, in the season of spring and summer lassitude, and an evil necessary only where there are large numbers or too remote personal relations in preceding years between the teacher and taught. Our examining boards generally feel at the close of a session that they know pretty well the range of knowledge of the candidate, and there has hardly been a year where at least one candidate has not been rejected, and sometimes several have been. But we, however, allow one second trial in the fall or the next spring. A skilled examiner, who begins simply, and commands the attention and confidence of the student, can generally sustain him against panic or confusion, and will detect and judiciously encourage him to get on his feet, if it occurs.

The California plan, with a three- or four-page printed program of oral examinations over prearranged ground and with spectators, interests me exceedingly, and I should like to see it in operation. My fear is that it would tend to narrow the range of preparation and to the gradual introduction of slightly scenic effects; that, unconsciously to himself, especially if he had been an instructor of the candidate, his examiner might be too solicitous to have him appear well, or at least not to have him fail. I must protest against any but the severest and highest standard, and fear that, if Doctors of Philosophy continue to multiply, we shall be in

danger of the learned proletariat complained of in Germany as due to this cause. Chemistry, I think, has produced too many doctors. Of applicants for instructorships at Clark during recent years chemists far exceeded every other class.

MR. PACE, OF THE CATHOLIC UNIVERSITY OF AMERICA:

In view of what has been stated concerning the disadvantages under which even the best student often labors in examinations, both oral and written, it might be well to consider whether the conferring of the degree should depend on a single examination; whether, in case of failure, the candidate should be allowed to take a second or a third examination; and whether a candidate who fails at one university should be permitted, without further formality, to present himself for examination at another university.

MR. SHEA, OF THE CATHOLIC UNIVERSITY OF AMERICA:

During the period 1889-92 I collected information concerning the character and severity of the examination of about thirty candidates for the Doctorate of Philosophy at the University of Berlin, the principal subjects being physics, mathematics, astronomy, and chemistry, and compared it with that obtained about examinations for the same degree held at Johns Hopkins, Harvard, Pennsylvania, Yale, and other prominent universities. The comparison indicates that the examinations in nearly all cases in this country were more rigorous than the examinations held at the University of Berlin.

At Berlin the greatest stress was laid upon the dissertations, which had to be printed before promotion. If the dissertations were excellent, the candidates were very sure of receiving degrees, even if the oral examinations were poor. The promotion, consisting of the public defense of the dissertation and the theses, was scarcely more than a matter of form, only one candidate having failed in the public defense during the three years above mentioned.

In this country, on the other hand, there does not seem to be such great importance attaching to the dissertation, and the weakness seems to be that, in general, the dissertation is not required to be printed and distributed and subjected to public defense, before the conferring of the degree.

MR. CRANE, OF CORNELL UNIVERSITY:

The difficulties attending an oral examination, which have been alluded to by previous speakers, have been experienced at Cornell, and there has been a tendency of late years to introduce written examinations as a part of the final examination. I do not know that an oral examination has ever been waived, but in certain minors a written examination is more convenient and affords a grateful relief from the strain of the oral test. I should certainly not wish to see the oral test abolished, nor do I think there is any such tendency at Cornell. It seems to me that, if too much emphasis is laid upon written tests, there is danger of confusing it with the ordinary term examinations of the university, and I understand, from what has been said, that it is the custom at certain institutions to accept the term examination for the minors, or to set an examination in given works, which do not differ from ordinary university examinations. This I deem very undesirable, and, so far as I know, it is never practiced at Cornell. The examination for the doctorate is always one final examination, distinct from, and not including, any ordinary university examination. It is open to members

of the faculty, but not to students, either graduates or others, and usually extends over a space of three hours, the division of time and subjects being arranged by the examiners.

THE THIRD SESSION

FELLOWSHIPS

PAPER READ BY MR. HARRY PRATT JUDSON, OF THE UNIVERSITY OF CHICAGO

[ABSTRACT]

Fellowships have been established in American universities in order to encourage advanced work. They are a sort of educational bounty—in effect, a species of protective tariff on domestic learning. Under this stimulus, and doubtless largely by reason of it, graduate schools have grown luxuriantly in late decades. In 1898-99 there were in the United States 5,612 graduate students. This was at the rate of seventy-four to a million of population, as against five to the million in 1872.

In the academic year 1899-1900 different institutions expended in fellowship stipends sums ranging from \$15,000 to \$25,000. In the next previous year the Commissioner of Education reported 447 fellowships in 52 institutions, excluding schools strictly professional. Of this number 293 were from universities within this Association.

There are many diversities in methods—with reference to the amount of stipend, to the payment of tuition fees, to services rendered in return for the stipend, and to the amount of graduate work, if any, required as a condition precedent. The date of making appointments is not uniform. Candidates may apply in more than one place, thus making it possible to secure two or more appointments simultaneously. In such cases the appointees may accordingly select the most eligible, thus putting the institution whose appointment is declined to some embarrassment in filling the vacancy.

By these diversities in practice, also, universities are virtually put in the position of competing for fellows, the one offering the largest inducements naturally winning in the contest.

Finally, nearly all fellowships are used to recruit the ranks of candidates for the degree of Doctor of Philosophy. The number of research fellowships offered to those who have made the doctorate is as yet inconsiderable, and fellowships in strictly professional schools, like those of law and medicine, are very few.

In the light of these facts, several queries naturally occur:

Is not the graduate school itself, after all, practically a professional school? Nearly all graduate students are fitting themselves for teaching positions. They

hope for college chairs, but in many cases have to be content with places in secondary schools. But specialization is in most cases a means to the specific end of teaching.

In the second place, is not the demand for specialists as teachers now so imperative that artificial stimulus for graduate work is no longer a necessity? The colleges are now not content with superannuated ministers as candidates for places in the faculty; trained specialists are sought as a matter of course. Secondary schools are more and more making the same requirement, and the time seems not far distant when it will be as difficult for a non-specialist to secure a high-school or academy place as a college appointment. This being the case, has not the system of pre-doctorate bounties largely served its purpose?

Again, is not the advanced work which now needs the most attention that of research for its own sake—for the advancement of knowledge? Acquiring a specialty for the sake of teaching it is one thing. Pursuing special work for the sake of extending the bounds of knowledge may be, and often is, a very different thing.

Under these circumstances, then, I would offer a few suggestions which seem to me pertinent:

1. In the first place, whatever need there may be of encouragement and reward for promising doctorate candidates may largely be met by a number of graduate scholarships. They should always be given for proved merit, and should yield little more than the university fees—if any more, enough only to pay for books and material consumed in work.

2. The number of pre-doctorate fellowships should be lessened. There might be a few for select cases. But with regard to these there should be coöperation among the universities with reference to certain points.

(a) The amount of the stipend should be equalized, with possibly a reasonable differential in favor of expensive places of residence.

(b) There should be a uniform system as to demanding tuition fees of fellows.

(c) There should be uniformity as to requiring service from fellows.

(d) There should be uniformity in the time of making appointments.

(e) A given candidate should be permitted to apply in but one institution.

(f) A fellowship should be given only after at least one full year of graduate work, so that experiments might be avoided.

3. The funds released from the present system of pre-doctorate fellowships might then be devoted to endowing a considerable number of *research fellowships*. These should yield a relatively large stipend, and should be granted only to those who have made the doctorate with credit and who have already on foot an investigation which promises results.

It seems to me that in this way fellowship funds would be applied at the point where the need at present is greatest. To encourage scholarly research is to enlarge

the field of science. If that is done, we may be quite sure that all the rest will follow.

At the same time, it seems clear that advance in this direction must be slow, unless the larger universities take some common action. So long as the promising fellows of one institution are likely to be bought up by others which entice them away by fat stipends and easier conditions, the present state of things will continue. But unity of action will benefit all alike, and at the same time will give an impetus to the common cause of the advancement of learning to which all are devoted.

DISCUSSION ON "FELLOWSHIPS"

[ABSTRACT]

MR. BUTLER, OF COLUMBIA UNIVERSITY:

I would indicate briefly the steps in the development of the fellowship system in American universities, and the forces which have brought this development about. I may cite the experience of several institutions to show how great is the pressure for appointment to university fellowships, and how frequently the same persons will offer themselves as candidates at several institutions and endeavor to balance the chance of appointment at one university against that at another. Columbia University has found it necessary to put a stop to this practice by requiring each person recommended for a fellowship by the committee having the matter in charge to state in writing to the president, before his appointment is confirmed by the University Council, that he will not resign the fellowship to apply for or to accept a similar appointment in another institution. This policy has been effective in producing the desired result.

In my opinion there are too many fellowships now in existence in the American universities, and I have the conviction that the excellence of the principle underlying the fellowship system has been greatly obscured by the abuse of the system itself. As the result of inquiry conducted in the year 1899, I have found that sixteen institutions announced no fewer than 259 fellowships and 232 scholarships, all of the former and most of the latter being for graduate students.

I am of the opinion that there is great danger in the unchecked development of a policy which has the effect of assisting to a scholarly career men who by natural capacity and by training are not best fitted for it. The fear is widely expressed that, unless the most severe tests are insisted upon in selecting the holders of graduate fellowships, the universities will find themselves expending their money and their energy upon a considerable body of third-rate and fourth-rate men and women. Columbia University has within a year reduced the number of its graduate fellowships from twenty-four to eighteen, doubtless feeling the force of the contention here made.

The speaker concluded his discussion by describing the administrative process by which fellows were selected and appointed at Columbia University.

MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:

Pennsylvania's experience goes to substantiate Dean Judson's contention that there are too many fellowships. We always have many applicants for every fellowship, but we do not

always have the applicants that we desire. We have, therefore, every year followed the policy suggested by Dean Judson, and have cut down the number of fellowships awarded to meet the real demand. In only one year since the fellowships were established have we filled them all. The question of joining with the other universities, however, in a pledge to limit the number of fellowships given in a certain year, or to cut down their value, is open to serious objections. We have found our fellowships of the greatest value to the university, but not in the way of increasing numbers. We have had fewer students in several years since than we had before the fellowships were established, the reason being that the fellowships have attracted to the university a body of picked men who, in a measure, set the standard of the department and thereby force out the less efficient students. We believe, therefore, that they have worked in the interests of scholarship as well as in the interest of the university. To diminish their number permanently, or to reduce their value, would probably be an injury to the interests of the institution. Every university possesses certain advantages over others in the way of special endowments. While I believe that this Association would be able to develop to a very considerable degree friendly coöperation among the institutions represented in it, I doubt whether that coöperation could be developed to such a point as to induce an institution to surrender special endowments granted to it for definite purposes, unless it could be shown that its own interests or the interests of scholarship at large would be favorably affected by such a surrender.

MR. BIRGE, OF THE UNIVERSITY OF WISCONSIN :

The University of Wisconsin has sixteen university fellowships of \$400 each. Two of these are assigned to Latin and Greek, two to history, and two to economics and political science. The remaining fellowships are unassigned. One or two are usually given to graduate students in engineering, and the remainder to the departments in the College of Letters and Science. The annual fees for graduate students are \$20, incidental fee in the College of Letters and Science, and \$30 in engineering. Laboratory fees, etc., are required in the various departments as of undergraduate students. University fellows are expected to serve as teachers in the department in which their studies lie, to the amount of one hour per day, or an equivalent amount in laboratory supervision, or the reading of papers, etc. The fellows are elected in May. Besides these university fellowships there is an alumni fellowship of \$400 and one fellowship, from private sources, in the School of Pharmacy. No teaching is required of these fellows. There are four university graduate scholarships: two in history and two in economics and political science; each having a value of \$200. There are besides five graduate scholarships provided from private funds, having a value of \$200 to \$250. Two of these are awarded in German, one in the classics, one in English, and one in Norwegian. None of the fellowships and scholarships from private sources are endowed, the amount being paid annually by contribution from private sources. Several of them have, however, been maintained for a number of years and are regarded as permanent.

The University of Wisconsin has not found its fellowships and scholarships too numerous for the best interests of its graduate work.

MR. HALL, OF CLARK UNIVERSITY:

Here again I regret to find myself in disagreement with my former colleague, Professor Remsen, whose view appears to me somewhat hard and lacking in the saving salt of idealism. I think a "fellow" should be the very apple of the eye of the university; that here, if nowhere else, we should let up a little on the hard *quid pro quo*, pay-as-you-go American common-sense business-man's view, and revert to the original idea of school, which meant leisure. A true fellowship, it seems to me, should never imply teaching in the institution, and should have income enough attached to it so that the holder should not be required to eke out a part of his sustenance by outside work. An élite young graduate, who has decided to undertake the hard labor of non-professional specialization and to enter the hot competition for an academic chair, with its tedious delays and severe apprenticeship, is worthy of better treatment than he often receives. I have looked over hundreds of endowments for impecunious students in German and English universities, some of them several hundred years old, and their spirit should not be forgotten by our hustling and economic modes of academic administration. Such men should be free from over-solicitude about their maintenance. Professors should feel called to serve their needs, and in every way the professor should feel that he cannot respect such youth too highly, nor dig too diligently about the roots of their talent, or water too copiously. State universities, dependent upon legislative grants, can do little in the way of such fellowships, but to my mind there is something pathetic in the conditions which our smart business ideals have often enforced. Sometimes a large inroad on the time of fellows is made in laboratory drudgery, and sometimes they are almost apprenticed to a professor who makes them work up some petty details of a larger work of his own. They sometimes have to receive the income of funds as a loan and pledge repayment within a certain time. All this seems to me to be sinning against the most precious thing in the world, viz., the nascent stage of ability and future leadership. Most of these young men come from the middle classes, and their parents have exhausted their powers of help at college graduation, and often have little sympathy with their son's zeal for specialization and mastery of some field of knowledge. But under favorable conditions it is an inspiration to see these young men grow, occasionally almost by leaps and bounds. Nature and heredity are just giving them the last installment of their capital of energy, and a year or two of carefully protected leisure and shelter, with due incentive and opportunity to develop, makes a vast difference in their own subsequent career and usefulness. I would rather see any other department of a university reduced than this.

MR. CRANE, OF CORNELL UNIVERSITY:

Although Cornell University has a large number of graduate fellowships and scholarships, viz., twenty-three fellowships and seventeen scholarships of the aggregate value of \$16,800 yearly, I have heard no complaint that the number was too large, or that the money so expended might be more profitably employed. On the contrary, there is a feeling in certain departments that an increase in the number of fellowships and scholarships would be desirable. I know that this is the case with the Departments of Germanic and Romance Languages, which would like to see the establishment of additional fellowships and scholarships for the purpose of affording future teachers the opportunity of foreign study. The fellowships and scholarships are assigned to certain departments or groups of departments,

and are conferred by the university faculty upon the recommendation of such departments or groups. The responsibility for the character and ability of the fellow rests upon the departments themselves, and great pains are, of course, taken in making the final choice. I cannot see that the system has resulted in the selection of mediocre men, or has acted as an encouragement to that class of persons to enter upon, or continue, advanced studies. It seems to me a proper mode of fostering advanced study, and a perfectly dignified way of aiding those who might possibly without it earn sufficient means to prosecute their work independently, but who would be greatly hampered and retarded in their progress.

MR. CONATY, OF THE CATHOLIC UNIVERSITY OF AMERICA:

Ought not studies for the doctorate of theology, law, etc., to be kept in mind in the discussion of the bearing of fellowships on the studies and the work of students for the degree of Doctor of Philosophy?

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

We are not embarrassed by an excessive number of fellowships at California. We have but few, at most seven or eight, and we have no difficulty in awarding them. With the exception of the three fellowships in astronomy, they may be used for purposes of study in other institutions, and in some cases the recipients are advised to study abroad. We aim to make our fellowships aids to research, but they have not in every instance been used for this purpose.

Professor Stringham then referred to the following resolution of the Graduate Council of the University of California, as approved by the Board of Regents :

"That persons appointed as fellows be required to devote all their time to advanced study; except that, on the recommendation of the head of the department concerned, and by vote of the Graduate Council, a fellow may be allowed to offer advanced instruction in the immediate line in which he is studying to an extent not exceeding two hours a week, or to assist advanced students in laboratory work not more than six hours per week." (The usual stipend of fellows in American universities is about five hundred dollars per year, and they are in many cases eligible to reappointment for a second year.)

MR. MAGIE, OF PRINCETON UNIVERSITY:

Princeton University offers a few fellowships, to be gained by competition among candidates from the Senior class; also others, which are given to qualified graduates on application on the basis of their records of previous work. Our aim has been to give these fellowships to men who were sufficiently rounded in their general culture to be likely to prove of more than ordinary usefulness as teachers as well as original investigators. We would welcome and promote any movement which would reduce the number of fellowships given to candidates for the Doctor's degree, and increase the number of those given to qualified students engaged in research.

MR. BRIGGS, OF HARVARD UNIVERSITY:

Although we have at Harvard a very large number of fellowships and scholarships in the Graduate School; although our fellowships alone are forty-one in number, with a total income of nearly \$21,000, we still believe that the holders of them are almost invariably strong men. The competition in our Graduate School is very sharp. It is scarcely possible

for a student to get a fellowship who has not already spent at least one year in the Graduate School, and who is not therefore intimately known to some of the instructors in his department. He must first pass muster with the department, which names its best men to the division; he must next pass muster with the division, which names its best men from all departments to the Committee on Fellowships and other Aids for Graduates; he must next pass muster with this committee, which tries to adjust the claims of the different divisions; and he must next pass muster with the faculty, which is by no means sure to accept without question recommendations for fellowships. After the faculty comes the corporation, whose acceptance of the faculty recommendations may usually be counted on. All this means a fine sifting process, which ought to insure unusual excellence in the holders of fellowships. Appointments are for one year only, and, though often renewed for a second year, are rarely renewed for a third.

Besides fellowships in money, we have what we call John Harvard Fellowships, "without stipend"—for persons who have held other fellowships as long as they can be held, or who have no need of fellowships, but who find in studying abroad that the official testimony of the university to their quality is of real service to them. The John Harvard Fellow is, like any other fellow, responsible to the department for his work at home and abroad.

In general, the great danger of graduate aid seems to me the danger of tempting mediocre men to dally at seats of learning, possibly unfitting themselves for active life. As someone has expressed it: "Such men should be pushed out of the nest earlier." I am especially interested in what Professor Magie has said on this subject, and in his comparison between the graduate schools and the theological schools. We cannot afford to weaken the profession of teaching as the minister's profession has been weakened. I do not mean that all Doctors of Philosophy should become teachers, or that the graduate school is, as it is sometimes called, a professional school for teachers and nothing else: yet a Doctor of Philosophy is said to be qualified to give instruction in his subject; and, as a matter of fact, most Doctors of Philosophy wish to teach. Everybody knows that there are too many Doctors of Philosophy for vacant college positions. The inferior ones cannot get or ought not to get college positions; yet the training they have received in their candidacy has often given them an intense love for a kind of learning which in school positions they will be quite unable to follow. The danger of recruiting the ranks of teachers with desiccated Doctors of Philosophy is serious; so is the position of such Doctors of Philosophy when at the age of thirty they find themselves unable to get teachers' positions, and when, with a certain amount of unmarketable learning, they must face, belated as they are, the problem of life.

THE FOURTH SESSION

TO WHAT EXTENT SHOULD A CANDIDATE FOR THE DEGREE OF DOCTOR OF PHILOSOPHY BE EXPECTED TO SHOW A KNOWLEDGE OF SUBJECTS NOT IMMEDIATELY CONNECTED WITH HIS MAJOR SUBJECT?

PAPER READ BY MR. WILLIAM ROMAINE NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA

[ABSTRACT]

1. The battle between the traditional conception of a liberal education, *i. e.*, one consisting in the main of Latin, Greek, and mathematics, and the newer conception of a liberal education, *i. e.*, four years' training in pure science, including in that conception all branches of learning when pursued with a view to the development of general principles, is practically decided in favor of the latter.

2. The great increase in the number of liberal studies offered by our larger colleges has made it absolutely necessary to find some principle of choice. Two parties are now forming, one contending that a college education should be based upon the extensive principle, embracing the rudiments of a large number of subjects; the other, that it should be based upon the intensive principle, giving a good specialized knowledge of a few subjects.

3. From the point of view of the graduate work it may be stated:

(a) That extreme undergraduate specialization is undesirable.

(b) That the precise degree of undergraduate specialization which should be recommended by way of preparation for graduate work cannot be defined.

(c) That the most undesirable extremes of specialization can be avoided by the graduate schools refusing to grant the degree of Doctor of Philosophy in less than three years after graduation.

(d) Students who have specialized too much as undergraduates should not be refused permission to proceed to the Ph.D. degree, but should be encouraged to pursue a more extensive course as graduate students than they would otherwise have chosen.

DISCUSSION ON THE TOPIC "TO WHAT EXTENT SHOULD A CANDIDATE FOR THE DEGREE OF DOCTOR OF PHILOSOPHY BE EXPECTED TO SHOW A KNOWLEDGE OF SUBJECTS NOT IMMEDIATELY CONNECTED WITH HIS MAJOR SUBJECT?"

[ABSTRACT]

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN:

Wisconsin gives only one Doctor's degree—Ph.D.—the one practical prerequisite for entrance upon the study for which is a Bachelor's degree from a reputable institution of learning. Where the value of any Bachelor's degree is not well known to the Graduate Committee, the candidate is not formally started upon his course toward the degree till the committee has fully satisfied itself. A candidate pursues his graduate studies for at least three years, of which the two first, or the last, must be spent at Wisconsin, having a major study and two minors. The major runs, of course, throughout the whole term of residence—has the right of way, so to speak, the thesis being a part of the major work. Great stress is laid at Wisconsin upon the thesis, in the matter of the originality and completeness of the line of research followed in any particular case, and here perhaps, as in the other best American universities, we may best challenge comparison with European universities in our graduate work. The first minor is expected to be closely related to the major, while in the second minor much wider latitude of choice is allowed. The amount of knowledge of subjects not immediately connected with the major depends largely on the views that may prevail in the various departments concerned, but, as a general rule, we insist only upon a good reading knowledge of German and French, outside of the regular subjects of the major and minors. The first minor is, in general, equivalent to a full study (five-fifths) for at least two years, the second minor to a full study for at least one year; but whether a nominal three-fifths or four-fifths course may be counted for this minor is left to the discretion of the department concerned; the actual number of hours the candidate attends lectures or seminary exercises for a course being a department affair.

MR. BRIGGS, OF HARVARD UNIVERSITY:

"Our views upon this topic," says Dean Wright, "have been partly indicated already. As all candidates for the Doctor's degree must have the Harvard A.B. or its equivalent, and as this is based upon a very broad substratum of liberal knowledge, we think it is not necessary to require of candidates for the Doctor's degree knowledge of subjects not intimately connected with their own subject."

Though I believe minute knowledge of subjects not intimately connected with the subject in which the candidate is working for the degree cannot be justly demanded, yet I believe firmly that a certain basis of general culture should be required for the Doctor's degree. In particular, I believe that the thesis should be written in the English language. One of the great dangers in this country is the production of what may be called illiterate scholars—men of learning who cannot express their learning well, and who in their search for remote subjects pay no attention to form. There is danger that the theses will be masses of ill-arranged learning, dumped on paper; and that we shall have the spectacle of our

highest scholarly degrees awarded to uneducated men. This is particularly unfortunate when we remember that many Doctors of Philosophy, if they teach at all, must teach in secondary schools, in which their remote learning will be useless, and their want of general culture will unfit them for their work.

MR. PACE, OF THE CATHOLIC UNIVERSITY OF AMERICA:

Referring to the views previously expressed on the subject of migration, and to the apparently general opinion that the candidate's fitness for the degree is best ascertained by continued supervision of his work under the direction of his instructors, how far is it desirable that a part of the requirements, *e. g.*, the examination in either subordinate subject or in both subordinates, should be fulfilled at one university, and the other requirements, *e. g.*, the dissertation and the examination in the principal subject, at another university?

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

It is unfortunate that the candidate should be obliged to spend any of his time in piecing out a deficient undergraduate training. Yet many graduate students begin their studies at California, with the Doctor's degree in view, before they have fulfilled all our requirements for candidacy. We insist upon Latin equivalent to about four years' study of this subject in the high school, and a reading knowledge of French and German. Many Bachelors of Letters and Bachelors of Science come to us with some or all of these studies omitted from their undergraduate programs. We regard this as a great evil. These degrees, as given in many of our institutions, are distinctly inferior to the Bachelor of Arts degree.

Our conditions for the Doctor's degree call for two minor subjects, and we expect these to be chosen in studies closely allied to the major, but in different university departments. Such a distribution of the candidate's work usually places him under the joint guidance of three professors representing different departments. It has happened in the past, however, that two of these professors represented the same department.

MR. LEUSCHNER, OF THE UNIVERSITY OF CALIFORNIA:

The ideal undergraduate course should above all fit the student for life in general. It should also endow him with a thorough liberal culture, both from the point of view of the classics and history, and from that of the pure and applied sciences; and, lastly, it should furnish him with knowledge sufficient to enable him to specialize in any direction whatsoever. The course which, in my mind, comes nearest to meeting these requirements is that of the German *Gymnasium*. It leads to any and all higher pursuits in life. But, although a graduate of one of Germany's leading *Gymnasia*, I cannot help but feel that the *Gymnasium* course has many defects, chief among which is its failure to develop to the highest degree the talents of the individual. There is a good reason why we could never adopt, in this country, a course like that of the *Gymnasium*. It is simply that our American boy would never submit to the severe life of the German *Gymnasiast*. There are other reasons, however, why I should not consider it wise to adopt the German system. Thus each college and university of this country finds itself called upon to solve the problem as best it can. Perhaps the main strength of our American system of education lies in the very diversity of the methods adopted in different institutions, but undoubtedly this diversity interferes to some extent

with the free circulation of graduate students from one institution to another, especially of those who desire to proceed to a Doctor's degree. Now, is there any reason to believe that any one institution rather than any other has succeeded in discovering the correct way of dealing with the question? May we not consider the different solutions reached by really good institutions to be equivalent? What, then, should keep the individual member of this Association from giving to the Bachelor's degree of its sisters in the Association the same recognition as a prerequisite to candidacy for a higher degree that it does to its own? The University of California would gladly coöperate in such a movement. It is the policy of the University of California to approve of any action that will secure in the various universities of the Association mutual recognition of their Bachelors' degrees, as far as this is possible without interfering with higher standards.

No university, however, needs to waive the right of rejecting a graduate from another university in the Association, any more than we waive the right in California to deny one of our own graduates the privilege of proceeding to the Doctor's degree if, in the opinion of the committee which supervises his work, he is not the ideal candidate for that honor, though he may have met all formal requirements.

As regards the question asked by President Angell, whether in turning out Doctors of Philosophy some or all of the universities here represented lay emphasis on the qualifications of the Doctor as teacher, I believe that, while we duly take care of that side of their preparation, we lay the greatest stress on turning out Doctors who are capable of doing original work, and who will be leaders in their chosen field. In this connection I may add that the Berkeley Astronomical Department, which sends students to the Lick Observatory for part of their graduate work, recommends for admission to the Lick Observatory only students who, in their group elective work, give evidence of exceptional qualifications as accurate observers and computers, and of ability for original research. Students who show only average ability are thus not encouraged to go on with astronomical studies, and the same policy is observed in many other departments of the university.

MR. MAGIE, OF PRINCETON UNIVERSITY:

Princeton University requires as a prerequisite to candidacy for the degree of Doctor of Philosophy a degree of Bachelor of Arts of an institution whose academic course is equivalent to that pursued in Princeton; this requirement being interpreted to include the condition that the candidate shall have studied a sufficient amount of Greek. The candidate is also required to offer a subject in philosophy as one of his subsidiary subjects. It is our conception that the Doctor of Philosophy degree implies in its possessor a certain general culture which has continued beyond the time at which he was graduated B.A., and which is shown in the character of his special work for the degree as well as by the subsidiary subjects which he offers. It is our belief that a far higher type of teacher and investigator will be developed by emphasizing the elements of education which make for general culture, than by restricting the student's attention exclusively to the subject which he chooses as his specialty.

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*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The Third
Annual Conference*

*HELD AT CHICAGO, ILLINOIS
(October 1913)*

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*The Third
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MAY 12 AT CHICAGO, ILLINOIS



*THE ASSOCIATION
OF
AMERICAN UNIVERSITIES*

1901-1902

The Association of American Universities

JOURNAL
OF
PROCEEDINGS AND ADDRESSES
OF THE
THIRD ANNUAL CONFERENCE

HELD AT
CHICAGO, ILLINOIS
FEBRUARY 25-27, 1902

1902
PUBLISHED BY THE ASSOCIATION

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MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California.

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois.

CLARK UNIVERSITY,
Worcester, Massachusetts.

COLUMBIA UNIVERSITY,
New York City, New York.

CORNELL UNIVERSITY,
Ithaca, New York.

HARVARD UNIVERSITY,
Cambridge, Massachusetts.

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland.

THE LELAND STANFORD JUNIOR UNIVERSITY,
Palo Alto, California.

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan.

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania.

PRINCETON UNIVERSITY,
Princeton, New Jersey.

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin.

YALE UNIVERSITY,
New Haven, Connecticut.

CALENDAR OF CONFERENCES

FIRST ANNUAL CONFERENCE (organization),
Chicago, Illinois, February 27-28, 1900.

SECOND ANNUAL CONFERENCE,
Chicago, Illinois, February 26-28, 1901.

THIRD ANNUAL CONFERENCE,
Chicago, Illinois, February 25-27, 1902.

OFFICERS

1902-1903

President—The representative of Yale University.

Vice-President—The representative of Cornell University.

Secretary—The representative of the University of Chicago.

For the additional members of the *Executive Committee*—The representative of the University of Pennsylvania; the representative of the University of Wisconsin.

THE THIRD ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

TUESDAY, FEBRUARY 25, 1902

MINUTES

1 P. M.—The members of the Association, upon the invitation of the University of Chicago, took luncheon at the Quadrangle Club.

2:30 P. M.—The FIRST SESSION was called to order in Haskell Assembly Hall of the University of Chicago, at 2:30 P. M., with Mr. Butler, of Columbia University, in the chair.

The following representatives of the universities were present :

UNIVERSITY OF CALIFORNIA—Mr. Benjamin Ide Wheeler, Mr. Irving Stringham.

CATHOLIC UNIVERSITY OF AMERICA—Mr. Thomas J. Conaty, Mr. Charles P. Neill.

THE UNIVERSITY OF CHICAGO—Mr. William Rainey Harper, Mr. Thomas Chrowder Chamberlin, Mr. Rollin D. Salisbury, Mr. William Gardner Hale, Mr. J. Laurence Laughlin.

CLARK UNIVERSITY—Mr. G. Stanley Hall.

COLUMBIA UNIVERSITY—Mr. Nicholas Murray Butler, Mr. E. D. Perry, Mr. J. E. Russell.

CORNELL UNIVERSITY—Mr. H. S. White.

HARVARD UNIVERSITY—Mr. L. B. R. Briggs.

THE JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen, Mr. Paul Haupt.

UNIVERSITY OF MICHIGAN—Mr. Martin L. D'Ooge.

UNIVERSITY OF PENNSYLVANIA—Mr. William Romaine Newbold, Mr. Josiah H. Penman.

PRINCETON UNIVERSITY—Mr. William Francis Magie, Mr. Andrew F. West, Mr. John H. Finley.

THE LELAND STANFORD JUNIOR UNIVERSITY—Mr. David Starr Jordan, Mr. Walter Miller.

UNIVERSITY OF WISCONSIN—Mr. E. A. Birge, Mr. C. F. Smith.

YALE UNIVERSITY—Mr. Arthur Twining Hadley.

It was voted that the minutes of the meetings of the preceding year be approved as printed.

Mr. Ulrich B. Phillips, the representative of the Federation of Graduate Clubs, was introduced to the meeting and invited to sit with the delegates.

A letter from Mr. John I. McCook, addressed to President Nicholas Murray Butler, together with certain reports of the Second Pan-American Congress, relating to the practice of the learned professions, was presented, and referred to the Executive Committee.

A letter from Dr. C. S. Minot, president of the American Association for the Advancement of Science, relating to the setting apart by the various universities of certain days for the annual convocation week, was presented.

Mr. Penniman, of the University of Pennsylvania, was requested to prepare a report of the meetings for the press.

The invitation of the University Club to a banquet in honor of the delegates was presented and accepted with thanks.

Mr. Hale, for the University of Chicago, presented a PAPER on:

1. The scope and character of the dissertation required of candidates for the degree of Doctor of Philosophy.
2. Should there be a requirement that the dissertation be printed?

The DISCUSSION which followed the reading of the paper was participated in by Mr. White, of Cornell University; Mr. Newbold, of the University of Pennsylvania; Mr. Hadley, of Yale University; Mr. Perry, of Columbia University; Mr. Hale, of the University of Chicago; Mr. Smith, of the University of Wisconsin; Mr. Penniman, of the University of Pennsylvania; Mr. Briggs, of Harvard University; Mr. Stringham, of the University of California; Mr. Hall, of Clark University; Mr. Neill, of the Catholic University of America; Mr. Laughlin, of the University of Chicago; Mr. Remsen, of the Johns Hopkins University; Mr. Phillips, the representative of the Federation of Graduate Clubs; Mr. Harper, of the University of Chicago; Mr. Birge, of the University of Wisconsin; Mr. Miller, of Leland Stanford Junior University.

The chairman was authorized to appoint a committee on nomination of officers for the ensuing year. The chair appointed as such committee:

Mr. Jordan, of Leland Stanford Junior University.

Mr. Remsen, of the Johns Hopkins University.

Mr. Birge, of the University of Wisconsin.

The session closed at 5:10.

MEETING OF EXECUTIVE COMMITTEE

WEDNESDAY, FEBRUARY 26, 1902

MINUTES

9:30 A. M.—A meeting of the Executive Committee of the Association was held Wednesday morning, February 26. The meeting was called to order at 9:30 o'clock. The representatives of the University of California, the University of Chicago, Columbia University, Harvard University, and the University of Michigan were present.

It was voted that the letter from Mr. McCook, relating to the action of the Pan-American Congress, be laid upon the table, and that the President be requested to communicate with him.

The following financial report was presented by the Secretary, and approved:

FINANCIAL STATEMENT, TO FEBRUARY 1, 1902

Receipts:

From pro rata assessments of \$12.39, paid by fourteen members	- - - - -	\$173.46
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Expenditures:

For printing and distributing 800 copies of "The First and Second Annual Conferences" (as per bill)	- - - - -	\$144.80
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For Expenses of Secretary:

Telegrams	- - - - -	\$ 7.00
Postage	- - - - -	18.50
Miscellaneous	- - - - -	3.16
		<hr/> 28.66
		<hr/> \$173.46

Certified, February 25, 1902.

F. W. SHEPARDSON,
Secretary to the President of the University of Chicago.

It was voted to recommend that there be fixed an annual fee for membership in the Association and that the amount of such fee be \$15.

The meeting closed at 10:30 A. M.

SECOND DAY'S PROCEEDINGS

WEDNESDAY, FEBRUARY 26, 1902

MINUTES

10:30 A. M.—The SECOND SESSION was called to order in the University Rooms in the Fine Arts Building, at 10:35, with Mr. Butler, of Columbia University, in the chair.

It was voted by the Association to approve the financial report of the Secretary, as recommended by the committee (see above).

The report of the Executive Committee was presented, as above. It was voted by the Association to approve the recommendation fixing an annual membership fee of \$15.

Mr. Stringham, for the University of California, then presented a PAPER on the membership and policy of the Association of American Universities:

1. Should the membership be enlarged? If so, on what principle of selection?
2. Should the Association devote its attention wholly to questions concerned with the organization and conduct of graduate work; and, if so, should graduate work in law, medicine, theology, and applied science be included?

The DISCUSSION which followed the reading of the paper was participated in by Mr. Hadley, of Yale University; Mr. Harper, of the University of Chicago; Mr. Remsen, of the Johns Hopkins University; Mr. Newbold, of the University of Pennsylvania; Mr. Smith, of the University of Wisconsin; Mr. D'Ooge, of the University of Michigan; Mr. Neill, of the Catholic University of America; Mr. Hale, of the University of Chicago; Mr. Jordan, of Leland Stanford Junior University; Mr. Perry, of Columbia University; Mr. White, of Cornell University; Mr. Magie, of Princeton University; Mr. Penniman, of the University of Pennsylvania; Mr. Briggs, of Harvard University; Mr. Birge, of the University of Wisconsin.

It was moved by Mr. Newbold, of the University of Pennsylvania, as follows:

1. The membership should be enlarged.
2. The association should not devote its attention wholly to questions concerned with the organization and conduct of graduate work.
3. The Executive Committee is requested to draft such amendments to the constitution as shall seem necessary to carry out the policy above outlined.
4. These amendments shall be submitted to the several universities at least sixty days before the next meeting.
5. These amendments shall be one of the subjects for discussion at the next meeting.

It was moved by Mr. Remsen, of the Johns Hopkins University, to refer the resolutions of Mr. Newbold to the Executive Committee, to be considered by them, and that they be asked to report upon the same to the members of the Association sixty days before the next meeting of the Association.

The session adjourned at 12:30.

2:30 P. M.—The THIRD SESSION was called to order in the University Rooms in the Fine Arts Building, at 2:30, with Mr. Butler, of Columbia University, in the chair.

Mr. E. B. Copeland was presented as a third representative of Leland Stanford Junior University.

The Committee on Nomination of Officers (Mr. Jordan, of Leland Stanford Junior University, chairman) reported as follows:

For *President*—The representative of Yale University.

For *Vice-President*—The representative of Cornell University.

For *Secretary*—The representative of the University of Chicago.

For additional members of the *Executive Committee*—The representatives of the University of Pennsylvania and of the University of Wisconsin.

The nominations of the committee were accepted and the officers nominated declared elected.

Mr. Birge, for the University of Wisconsin, then presented a PAPER on "The Migration of Graduate Students."

The DISCUSSION which followed the reading of the paper was participated in by Mr. West, of Princeton University; Mr. Remsen, of the Johns Hopkins University; Mr. White, of Cornell University; Mr. Perry, of Columbia University; Mr. Hadley, of Yale University; Mr. Smith, of the University of Wisconsin; Mr. Newbold, of the University of Pennsylvania; Mr. Birge, of the University of Wisconsin.

Mr. Hall, for Clark University, then presented a PAPER on "What Is Research in a University Sense, and How May it Best Be Promoted?"

The DISCUSSION which followed the reading of the paper was participated in by Mr. Wheeler, of the University of California; Mr. Hadley, of Yale University; Mr. Laughlin, of the University of Chicago; Mr. Briggs, of Harvard University; Mr. Jordan, of Leland Stanford Junior University.

Mr. Jordan, of Leland Stanford Junior University, presented a list of institutions eligible for consideration in connection with a possible expansion of the Association. The list was referred to the Executive Committee.

The session adjourned at 5 o'clock.

MEETING OF EXECUTIVE COMMITTEE

THURSDAY, FEBRUARY 27, 1902

9:30 A. M.—A meeting of the Executive Committee was held Thursday morning at 9:30. The representatives of the University of Chicago, the University of Pennsylvania, the University of Wisconsin, and Yale University were present.

Upon consideration of the time and place of the next meeting, it was voted to accept the invitation of Columbia University to meet in New York city, December 29–31, 1902, beginning on Monday, at 1 P. M.

The chairman was requested to prepare a draft covering certain questions which should be submitted to individual members of the committee, and, after adoption by the committee, to the members of the Association, in accordance with the request of the Association (see above).

The Secretary was authorized, in accordance with action of the Association, taken February 28, 1901 (see p. 22 of *Proceedings of the Second Annual Conference*), to invite from the universities represented in the Association nominations for new members. The nominations already submitted were laid upon the table, to be placed in a fuller list after the response to the invitation for nominations.

It was voted to follow the same procedure as in former years in the preparation of the program.

Suggestions were asked and given concerning the order and form of printing of the *Proceedings*.

The committee adjourned at 10:30.

THIRD DAY'S PROCEEDINGS

THURSDAY, FEBRUARY 27, 1901

MINUTES

10:30 A. M.—The FOURTH SESSION was called to order in the University Rooms in the Fine Arts Building, at 10:30, with Mr. Butler, of Columbia University, in the chair.

The Secretary reported the action of the Executive Committee (see above) on time and place of the next meeting. The action of the committee was approved by the Association.

The thanks of the Association were extended to the University of Chicago and to the University Club of Chicago.

Mr. White, for Cornell University, then presented a PAPER on "The Degree of Master of Arts":

1. Should the granting of this degree be encouraged or discouraged?"

2. Upon what conditions should it be given, and what standard of accomplishment should it mark?

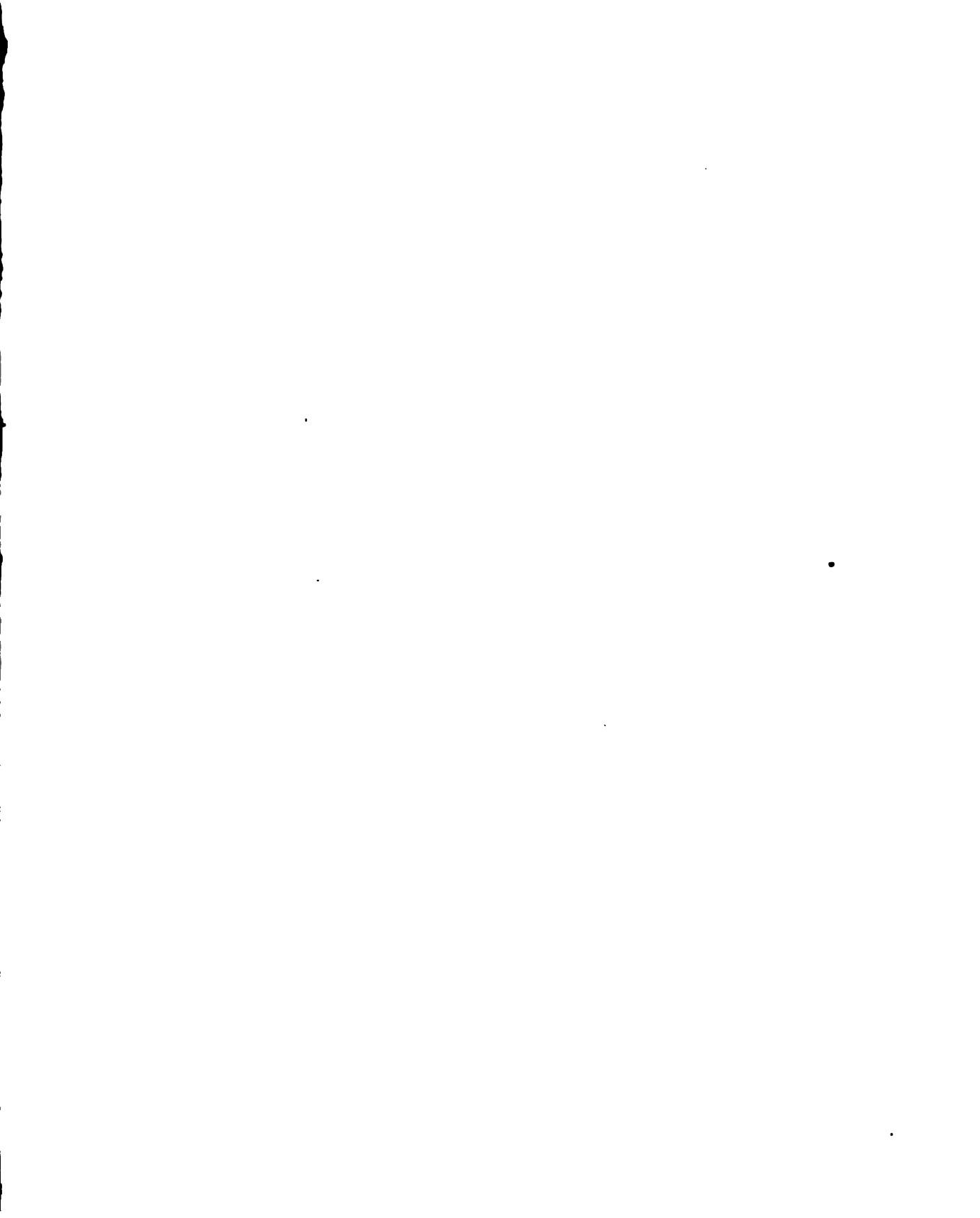
The Discussion which followed the reading of the paper was participated in by Mr. D'Ooge, of the University of Michigan; Mr. Hadley, of Yale University; Mr. Wheeler, of the University of California; Mr. Remsen, of the Johns Hopkins University; Mr. Harper, of the University of Chicago; Mr. Newbold, of the University of Pennsylvania; Mr. Briggs, of Harvard University; Mr. Chamberlin, of the University of Chicago; Mr. Smith, of the University of Wisconsin; Mr. Perry, of Columbia University; Mr. Russell, of Columbia University; Mr. Stringham of the University of California; Mr. Jordan, of Leland Stanford Junior University; Mr. West, of Princeton University; Mr. Neill, of the Catholic University of America.

At 12:30 the Association adjourned.

7 P. M.—A dinner in honor of the delegates to the Third Annual Conference of the Association of American Universities was given by the University Club of Chicago, at the club house.

Addresses were made by Dean L. B. R. Briggs of Harvard University, President David Starr Jordan of Leland Stanford Junior University, Dean Andrew F. West of Princeton University, and President Nicholas Murray Butler of Columbia University, upon the subject: "The Best College Training for Business Life."





In the majority of cases it is desirable that the subject taken up be of such scope that it can be treated exhaustively. But there must remain a residue of cases in which a large generalization, precluding by its very range an exhaustive treatment at every point, is set forth. No university would have refused to accept Darwin's *Origin of Species* as a satisfactory dissertation, in spite of the fact that a really exhaustive treatment — which in this case would have covered all the organized life of the planet — was necessarily lacking. Obviously, too, an investigation that successfully establishes a large generalization is of the highest grade of importance; but in general it belongs to a maturer period of life than that of the aspirant to the Doctorate.

Thus far I have spoken only of the *contents* of the dissertation, considered in their essential character. The form of presentation is of lower importance. But it by no means follows that it is of *no* importance. On the contrary, it lies within the power, and is the plain duty, of the judges of the dissertation to insist that the form of presentation shall be organic, shall be clear, and shall be not *unliterary*. A structure in which the parts do not stand in proper relations to one another should not be endured, no matter how just, or how important, the essential conception of the writer may be. As for the literary side, the higher qualities of style may well be desired, but cannot be insisted upon. All that can be demanded is that the expression shall be perfectly clear, and that it shall be free from incorrectness. As regards clearness, my experience leads me to think that something more detailed needs to be said to young workers. Clearness is partly a matter of expression, and partly a matter of structure in presentation. Now, the logical order dictated by *organic* structure may at times be followed in the presentation, without the attainment of practical clearness; for, in occasional cases, the mass of material with which it is necessary to deal before reaching the kernel of the matter may be so large that the kernel itself will escape the notice of all but very patient readers. I have in mind a particular instance, a Doctor's dissertation published in my own university, and my own department, in which the order was absolutely logical, but the point of which, in necessary consequence, was easily missed by a careless reader. The question was whether a certain cause popularly supposed to be operative existed, bringing about certain phenomena. The scheme of treatment adopted was one of the exclusion of one mass of phenomena after another, under an acute analysis of causes, until finally a residue was reached which refused to be excluded. The work may not be final, but is beyond doubt of distinct importance, and no one should now touch the subject without reckoning with it. When, however, the dissertation was published, several of the reviewers completely failed to find what the writer meant to prove, since the residuum established by him filled but a few pages, while the masses which he excluded filled a large number. Logically, the scheme of the dissertation was perfect. Practically, it was imperfect. In this busy world of swarming books, journal

articles, and monographs, no writer of our profession is justified in assuming that he is to have a "gentle reader." The long-tried temper of the reading specialist is not inclined toward gentleness, but rather toward exacerbation. Things must accordingly be made as easy for him as possible. His attention must be arrested at the outset of the dissertation, and his mind put upon the right track. It would therefore in general be wise, after the statement of the problem, to indicate the method of procedure, and the position which the writer hopes to establish. If, on the other hand, it should in an exceptional case be well to withhold all statement of the position taken until the end is actually reached, the writer should at least call specific attention to this postponement at the outset, while sketching the method which is to lead to the promised dénouement.

Before leaving this side of our topic, let me suggest that, though it is obviously not the purpose of the dissertation to show that the writer gives promise of being a good teacher, a clear and orderly presentation is nevertheless a distinctly hopeful sign of such promise, while an obscure and confused treatment hints strongly at the opposite.

II. We reach now the second division of the subject assigned, the answer to the question, *Should there be a requirement that the dissertation be printed?*

If we were judging solely on theoretical grounds, or even on grounds of the prevailing usage of the world at large, it would seem that the answer must inevitably be "Yes." But the actual diversity of practice seen in *American* universities (not in European) shows that the question cannot be settled so simply. We must then enter into a brief weighing of reasons, endeavoring to judge, with as much sympathy as possible, the arguments which may be brought for the negative side.

The arguments in favor of the requirement seem to me to be as follows :

Thus far in our discussion the dissertation has been considered merely as one of the two means of determining whether the candidate is worthy to receive the degree. But if it is good enough to accept, it is much more than this. It is not only a test ; it is at the same time a *product*, and a piece of *property*. What answer to our question would be suggested by each of these three aspects in turn ?

I. The dissertation is a *test*. Now the Association in the interests of which we are meeting from year to year has for its purpose the highest efficiency of American graduate work. Within the limits of reasonable inquiry, it would be glad to have the fullest possible information upon the conceptions actually held in American universities with regard to the aims of graduate work, and the degree of success with which these conceptions are carried out. If there were some simple and easy means of knowing the character of each examination given, the knowledge would be highly desirable. But such a thing is manifestly impossible. The sum total of questions and answers is too complex and too voluminous. Only one definite means of information with regard to the candidate's qualifications can easily be made accessible : his dissertation can be printed. Now it is true that all universities are giving other

degrees, namely those of Master and of Bachelor, without such accessible evidence that they are deserved. But these other degrees are lower and less important; and, in addition, it is clear that no satisfactory test with regard to them could be made public. The accepted dissertation for the Doctorate falls into an entirely different class. It is a definite test, forming a unit by itself. Of the writer the university conferring the degree says in effect: "This man is a discoverer." Unless there are very grave reasons elsewhere to be found, it has no right to add: "Take our word for it."

2. The dissertation is a *product*, and the accepted dissertation is supposed to be a product of some value. Then the world of scholars has a right to it. But access to it is practically impossible unless it is printed. Then it should be printed.

This argument cannot be met by the statement that most dissertations are of little consequence. A juster statement of the facts would be that some dissertations, or, if you please, many dissertations, are not of consequence. As a rule, dissertations *are* valuable; and every professional worker knows of many that have even been of striking value. In bibliographies of the more important publications in the field which I happen to know best not a few dissertations appear; and they are much better off there than if, in a manuscript or typewritten single copy, they were sleeping a dusty and silent sleep upon the shelves of some European or American university library. But, at the worst, we are completely debarred, in any discussion of what we ought to do, from starting with any such premise as that the dissertation for the Doctorate is a product having no value in itself. We cannot say to our candidates that they are expected to produce dissertations of no intrinsic value. If they do produce them, and we accept them, then let us confess the truth by printing, and so take the first step toward reform. My own conviction is, however, that our dissertations, as a class, would do distinct credit to American scholarship.

3. The dissertation is a piece of *property*. If it is accepted, it is supposed to be a piece of property of some value. It is an intellectual possession, belonging to the writer—a part of the capital with which he starts upon his career. But its effectiveness lies wholly in publicity. If printed, it forms the writer's best letter of introduction to the learned world at large, in his own particular field. If not printed, it is, as property, obliterated.

Three more considerations, allied with the last two presented, are worth pointing out. The knowledge that the dissertation, if accepted, is to be printed is inevitably an incentive to better work on the part of the writer. It can hardly seem to him of grave consequence to produce his best work, if its life is to be ephemeral, and even its grave unmarked. Again, the dissertations of other students, in other universities, may be stimulative and suggestive to candidates, both when they are seeking to find subjects which they themselves can treat, and after they are embarked upon actual investigation; but it is obvious that no system of loaning could make it easy for any

student in our Associated Universities to put his hand at will upon a manuscript or typewritten copy in the library of any one of them. And finally, if American dissertations are not printed, there is nothing to prevent duplication, which would become more and more frequent as our activity advances and brings us more and more into fields worked in by *foreign* investigators, who do print. Surely we cannot rest content with the idea of the American dissertation for the Doctorate being a mere piece of gymnastic apparatus, which one candidate after another may use solely to show his strength, with complete indifference as to any useful work accomplished.

Against these arguments I know but one that can be brought. It is that the cost of printing often weighs heavily upon the student, particularly if, as is sometimes the case, the dissertation is a large one, and illustrated with plates.

I shall not seek to underrate the force of this argument. But there are two circumstances that somewhat weaken it. A dissertation of distinct value can often be printed without expense to the writer. We all know of dissertations which have appeared as articles in learned journals, only reprints, of insignificant cost, being needed to satisfy the technical requirements of the university granting the degree. As to the matter of size, it is at once a sad and a hopeful fact that most writings can be cut down without hurting them, and that, in the matter of dissertations, the half is often more than the whole. The knowledge that a dissertation is to be printed is in itself likely to make for compactness, and so, indirectly, for quality. And even if an exceptional dissertation is long with good excuse, the reason generally is that the writer is dealing with a larger field than is strictly necessary; and a detachable part can ordinarily be found, which can be put out as a unit by itself. There are certain drawbacks in such a partial publication; but there are also advantages. The writer, in publishing a part of his work, gives notice that he has entered upon the field, and, if he has done so with promise, creates an expectation which is favorable to further effort. He will also find it easier, after the publication of a part, to get the ear of the learned world through a journal.

In the majority of cases, nevertheless, there will remain the necessity for an expense which undoubtedly must often weigh heavily upon the young candidate. But, on the other hand, there is probably no period in life when his shoulders will more readily brace themselves to carry a burden than when the Doctor's hood descends upon them. Something, too, may be said of the joys of seeing one's first important work in print, and of the pleasurable, or at least exciting, thoughts of the gauntlet of criticism which it is to run in its writer's name. Possibly, too, visions may float before the writer's mind of the post in which it is to help to instal him. At any rate, it does not seem that young Americans can be unable to fulfil a requirement which their fellows in Germany are constantly fulfilling, and, so far as I am aware, without an exception.

On the whole, then, my conclusion is that the considerations in favor of printing

the dissertation for the Doctorate distinctly outweigh those against it. In this my judgment may be at fault, and my presentation of the arguments may have no other value than that of introducing discussion. One aspect of the matter, however, seems at all events beyond question. If it is best that one university should require the publishing of its dissertations, it is best that all should; if it is best that one should not, it is best that none should. In saying this, I am not thinking of the special pecuniary inducement which in effect, however unconsciously, is held out to students by universities that do not make this requirement while others do. I am thinking only of the rationale of the matter. The question is not one into which local conditions can possibly enter. Whatever considerations hold for one university hold for all universities. We ought therefore to be able, through discussion, to reach a consensus of opinion on this subject; and, while we cannot legislate, such a consensus could hardly fail to have effect.

DISCUSSION ON "THE DOCTOR'S DISSERTATION"

MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:

The rule requiring the printing of the thesis went into effect at the University of Pennsylvania last June. Prior to its adoption the custom had been gradually extending, and for years past a number of the members of the faculty had required a printed thesis of students taking a Doctor's degree in their subjects. In the first year of its enforcement some difficulty was found in requiring the printing of the thesis before commencement day. In a number of instances students were allowed to delay the printing of the thesis for various reasons. It is my own conviction that it is quite legitimate to delay the printing of the thesis (1) in order to allow of negotiations with the publishers of journals; (2) to incorporate the thesis in a larger work whenever the scope of what had been the thesis can be easily indicated in the preface; (3) to allow of trivial alterations in the form or of the consultation of some authorities not accessible at the time the thesis was accepted. Material alterations in the thesis should never be allowed, unless when it is printed their precise character is definitely stated.

The tendency now manifest in most of our American universities toward requiring a very pretentious piece of work of the student as a thesis should be discouraged. In particular, the student should not be required to make some positive and important contribution to knowledge. The most significant part of the thesis does not lie in the results attained, but in the ability to handle a given problem in the right spirit and by the right methods. The problem may be of little importance, and the results may as properly be negative as positive.

MR. HADLEY, OF YALE UNIVERSITY:

Yale University has not required the publication of theses for the degree of Doctor of Philosophy. In practice, about one-half of the theses have actually been published, either as separate books and pamphlets, or in connection with the transactions of various learned bodies.

The reason for the failure to require publication has been twofold : first, on account of the expense ; second, on account of the fact that many of the productions which showed the clearest fitness to receive the degree are not of a kind which represent the final work which a man desires to have placed on record. Methods of investigation are tools ; and here, as elsewhere, the man who is most skilled in the use of tools is not the one who has already built the best house, but the one who is going to build a better house than any which he has hitherto completed.

In spite of the importance of this argument, Yale recognizes the force of the reasons urged in favor of publishing theses, and is in no wise disinclined to co-operate in a movement which shall render more universal the habit of such publication. In the event of joining in any such movement, Yale would probably prefer to reserve to herself and to the candidate the right of publishing a part of his thesis instead of the whole, provided this part were of sufficient clearness and importance to indicate to the world the character of ability which he was displaying in his researches.

MR. PERRY, OF COLUMBIA UNIVERSITY :

Since the reorganization of Columbia in 1890, the printing of the Doctor's dissertation has been required without exception. It has been felt that in no other way could a high standard of excellence be so well maintained as by providing that in every case the results of research on the part of the candidate should be made as widely accessible to scholars as possible. This is the object of our stipulation that 150 copies of the printed dissertation shall be delivered to the library, which distributes them by exchange with other institutions. There was at first much discussion about the wisdom of this requirement, but its desirability was long ago universally recognized with us, and no thought of a change seems now to exist.

In some cases the cost of printing seems at first to be a hardship to the candidate. However, it is felt that a considerable sacrifice may rightly be expected of the candidate for this degree, if necessary to secure it; and, on the other hand, there are several ways in which the cost to the candidate may be considerably lessened. The dissertation may be accepted for publication by a scientific journal, or to form one of the various series of "studies" published by the several departments ; in these cases the expense of furnishing the required 150 copies for the library, with special title-page, is not great. Instances have occurred where the dissertation has been at once published in book form, and put on the market in the usual way, when the university council, which has complete jurisdiction in matters affecting the higher degrees, has accepted a small number of copies as a fair equivalent for the number ordinarily required.

The character of the dissertation demanded at Columbia is largely indicated by the rigid requirement of printing. If the dissertation must be printed, it must be worth printing. It must be a contribution to the scientific literature of the subject ; either a treatment of new matter, or a discussion of old matter from a new point of view and with utilization of new material ; and it must prove the ability of the writer to handle a scientific subject in a mature and scientific way, with use of all available material, from original sources wherever these are accessible, and with independence of judgment.

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN:

The dissertation, or thesis, is regarded at the University of Wisconsin as the thing of chief value and importance as a requirement for the Doctor's degree. At least sixty days before the end of the period of study (minimum three years) the thesis must be handed in. It is passed upon by a committee of three, consisting of the chief representatives of the major and the two minor subjects. If accepted, it is required that the dissertation be published, and a copy (written or typewritten), with \$50, must be deposited as a guarantee of publication. Our theory is that it shall be published within a reasonable time (say, one year); but our theory and practice are often far apart. The chief reason for delay in printing alleged in most cases is the cost, which the candidate often cannot meet at once. Such generous provision for publication is, however, made through the bulletins of the University of Wisconsin, as well as through the *Transactions of the Wisconsin Academy*, that hitherto a considerable number of our Doctor of Philosophy theses could be published without expense to the candidate. The truth is probably that in many cases the thesis is, when accepted, not really ready for publication.

As to the length of the Doctor of Philosophy thesis, the speaker has much sympathy with the view expressed by the president of Harvard University in his last report (p. 22). While it is in our Doctor of Philosophy theses that American universities best vie with the German, there is no denying that the size of the thesis is often overdone. We sometimes exact, or expect, too much from our Doctor of Philosophy in the matter of the extent and thoroughness of the thesis; still oftener we do not exact enough from him in the way of filing it down, bringing it to the minimum compass which can clearly and adequately place the essential matter before scholars.

MR. PENNIMAN, OF THE UNIVERSITY OF PENNSYLVANIA:

I have listened with a great deal of interest to what has been said in discussion of this subject. The requirement that the dissertation be printed gives rise to a number of questions of a practical nature. If the dissertation is to be printed, it is quite important that duplication of work be avoided, so far as possible, by students in various graduate schools. There have recently come to my notice several cases in which a candidate for the degree of Doctor of Philosophy has, on the eve of publication, discovered that practically all of the material on which he has been working has just been published by someone else. If publication is insisted upon in such cases, it means that there are two books issued covering practically the same ground. It is possible in some cases to rearrange the material that has been gathered, and to take up the subject from some different point of view; but this is not always the case.

Might it not be possible to have some sort of a clearing-house for thesis subjects, so that students who are working along given lines may feel sure that their work is not being duplicated or interfered with by other students at other institutions? I am convinced that there are not infrequent cases where students have done a thoroughly good piece of work—one which is entirely deserving of such recognition as is accorded by the granting of a Doctor's degree—but work which it is not at all important or desirable to have printed. In these cases the requirement that the dissertation be printed seems unwise.

MR. BRIGGS, OF HARVARD UNIVERSITY :

Professor J. H. Wright, dean of the Harvard Graduate School, has sent me a few lines in which he expresses his views of the questions to be discussed by the Association. "I doubt," he says, "whether my views on the scope and character of the Doctor of Philosophy dissertation would be specially useful. I believe that the dissertation should be a substantial piece of original or independent work, and that it should require nearly all a man's spare time for about a year. In some departments the results of many months' investigation can be condensed into a few pages; in other departments a vast number of pages are necessary. I think there should be no legislation tending to limit the liberty of the candidate in writing his dissertation." Professor Wright adds that, in his opinion, the dissertation ought to be printed.

President Eliot in his report for the year 1900-1901 remarks: "The faculty of arts and sciences has, thus far, been unwilling to require that the theses of the candidates for the degree of Doctor of Philosophy or of Doctor of Science should be printed. The enormous size of many of these theses has contributed to prevent the faculty from adopting the rule which prevails in other universities. Many of these theses would make big books; and there are others which, though not large, would be expensive to produce in printed form, because of the elaborate plates which accompany them. Most of the writers of these voluminous or carefully illustrated theses would be quite unable to bear the expense of publication. It has seemed to the president that theses of such magnitude should not be required, or even accepted, as Doctor's theses. They have seemed to him exaggerations of any work which it is reasonable to ask for as evidence of fitness for a degree which should be taken by twenty-five or twenty-six years of age, if not earlier. This view, however, does not commend itself to the several departments of the faculty of arts and sciences which have charge of candidates for the higher degrees."

This feeling the president has strongly expressed to the faculty; and certainly the size of some Doctor's theses has been appalling. I do not agree with those persons who believe the theses are too long because too much time is spent on them. I believe that often a thesis is long, not because the candidate has spent too much time on it, but because he has spent too little. His subject may be too large and may require the handling of too much material; but the long thesis is, I believe, often a thesis which would be much shorter and less unwieldy if the writer had taken time to sift his material.

I cannot feel, with President Hall, that work for the degree of Doctor of Philosophy should be done at a small institution rather than at a large one, unless the size of the large institution prevents the student from getting the personal attention of his instructors. So far as my observation goes, instructors at a large institution give quite as much time to individual students as instructors at a small institution. There are a great many more students; but there are also a great many more instructors, each instructor with his own body of closely attached students. At Harvard University some of the instructors engaged in graduate work give an extraordinarily large share of their time to candidates for the degree of Doctor of Philosophy. One of our most distinguished scholars gives many hours of many days to individual candidates for that degree; and the candidates for that degree, in his department, feel themselves his disciples. If, with this attention to the individual, the candidates for the

degree get, besides, the background of a great university, with its opportunities and resources, they are, in my judgment, more favorably situated than they would be at a small institution. If the size of an institution means neglect of the individual, the case is obviously different.

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

On reading the printed statements of various universities concerning this question, I find that there is substantial uniformity in the definitions of the Doctor's dissertation. We are evidently agreed that the dissertation is of prime importance, and that it should display the power of independent investigation and embody results which form a contribution to knowledge or criticism. But, in spite of this uniformity of definition, there is great variety of result; the dissertation varies from a small pamphlet to a volume of several hundred pages. Certainly, the individuality of the candidate should not be hampered by narrow restrictions, yet there are valid objections to the acceptance of these unprintable volumes as substitutes for the printed dissertation. They have been well stated by Mr. Hale, whose arguments in favor of compulsory printing are very strong. In fact, they seem to me to be quite conclusive, and at the University of California we act in accordance with this judgment. We hold that in every case the Doctor's dissertation should be printed, (1) within a year after its *acceptance*, and (2) in the exact form in which it was approved by the persons charged with the duty of passing judgment upon it. This practice rules out the bulky treatise which cannot be printed on account of its excessive cost, and requires a condensation of its matter into a size which will make the printing of it possible. In accord with this practice, and in order to give some precision to our thought concerning the *form* of the dissertation, our Graduate Council makes the following declaration:

The inquiry should be confined within very definite bounds. The treatment should be as concise as the nature of the matter permits, and show familiarity with the history of the problem treated, with the literature bearing upon it, and with the most approved methods of research applicable to it. While it should exhibit creditable literary workmanship and a good command of the resources of expression, it must depend for acceptance more upon its matter than upon its style.

A statement very similar to this is made in the *Register* of the University of Michigan.

MR. HALL, OF CLARK UNIVERSITY, said that the faculty of that institution had been from the first unanimously agreed that every thesis must be printed, and no Doctor's diploma had ever been issued from that institution until this had been done and the required number of copies deposited. He dissented from President Hadley's expression that the printing of Doctor's dissertations tended to precocity, and thought this view suggested some degree of imprisonment in the primary college formation, as if the university spirit was still, like Milton's tawny lion, pawing to get free, to borrow a simile of James Russell Lowell. Printing meant an appeal to the consensus of the competent outside and tended to give the student academic citizenship in his special field, with all its responsibilities. As the thesis now is an important and perhaps growing part of the requirements for the Doctor's degree, it was impossible to allow others to see upon what foundations and for what work the doctorate rested, unless the thesis was printed. He gave an illustration of the reluctance of professors to allow investigators in other colleges to see manuscript theses written by their students,

This would not have occurred had they been printed. The speaker held this matter to be of great importance for real university work.

MR. NEILL, OF THE CATHOLIC UNIVERSITY OF AMERICA :

As far as the discussion shows, there seems to be a substantial agreement with the views expressed in the paper we have had the pleasure of listening to on the scope and character of the dissertation for the degree of Doctor of Philosophy. There seems also a pretty general agreement that every academic consideration leans strongly to the side of requiring the printing of doctorate dissertations. The principal objection urged against the requirement of printing seems to be the matter of the expense involved — which in some cases is undoubtedly no small hardship on the candidate for the doctorate. It seems to me, nevertheless, that this ought not to be a valid objection against laying down a rule requiring the printing of dissertations. Circumstances may, and undoubtedly will, arise, from time to time, of such nature as will justify making exceptions to the rule. But the rule should be laid down, just the same, and when exceptions to it are allowed the reasons for such exceptions should be very strong ones indeed. The difficulty presented by the expense of publication certainly ought not to be met by the complete abandonment of a requirement of printing. Academic considerations ought not to be so easily sacrificed to monetary ones. Two methods suggest themselves for maintaining the requirement of printing and at the same time meeting the difficulty of the expense involved. One is the creation of a fund out of which the university itself might defray the expense of publishing dissertations in cases where it was impossible for the student to do so. The other plan is the creation of a fund for the purpose of advancing the necessary sum to students who, without such loan, could not meet the requirement of printing. The second plan seems to me the fairer, and an entirely practicable one. But, at all events, the considerations that weigh in favor of a rule requiring the printing of dissertations are so many and so strong, and make for the holding of both students and institutions up to so high standards, that every effort ought to be made to surmount the difficulty of expense rather than surrender to it.

Mr. D'OOGHE, OF THE UNIVERSITY OF MICHIGAN :

Mr. D'Ooge was not present at the first session in which the character of the dissertation required for the degree of Doctor of Philosophy and the question of its publication were considered. As regards these points, however, the prevailing opinion held in the University of Michigan may be stated thus :

1. A Doctor's dissertation should show clear grasp of the subject discussed, systematic and scientific treatment, knowledge of the sources of information, and the attainment of some definite result. A dissertation should always be something beyond a compilation, and should aim to add to the sum total already known upon the given subject.
2. The dissertation should always be printed, as giving a stimulus to the best effort of the candidate, as providing a safeguard against accepting inferior productions, and as furnishing a means of disseminating information.

THE SECOND SESSION

THE MEMBERSHIP AND POLICY OF THE ASSOCIATION OF
AMERICAN UNIVERSITIES

1. *Should the membership be enlarged? If so, on what principle of selection?*
2. *Should the Association devote its attention wholly to questions concerned with the organization and conduct of graduate work; and, if so, should graduate work in law, medicine, theology, and applied science be included?*

PAPER READ BY MR. IRVING STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA

I shall not attempt to give a categorical answer to the first part of this question. If it be shown that outside of this Association there are any institutions whose interests, aims, and achievements place them unquestionably in the rank of universities, institutions maintaining efficient graduate schools, then it is our manifest duty to invite them to participation in our discussions; if there be none, we shall wisely hesitate to enlarge our membership.

But I shall not discuss the claims to membership of any particular institutions. I shall not even mention by name any institutions not now members of the Association. We cannot elect new members at this meeting, and this is not the time or place for making an effective canvass upon any nominations.

I turn to the second part of the first question: *Is there a principle of selection by which we should be guided?*

The articles of organization of the Association declare:

That "it is founded for the purpose of considering matters of common interest relating to graduate study."

That "it is composed of institutions on the North American continent engaged in giving advanced or graduate instruction."

That "institutions [other than those composing its initial membership] may be admitted [to membership] at the annual conference on the invitation of the Executive Committee, indorsed by a three-fourths vote of the members of the Association."

The procedure for admitting new members, adopted at the last annual conference, is the following:

"The Executive Committee shall invite from the universities representing the Association nominations of new members. At least one month before each annual meeting such nominations shall be communicated to the members of the Association. The proper authorities of the universities composing the Association shall be

requested to instruct their delegates with a vote on each university approved for membership by the Executive Committee."

This procedure has been accepted as satisfactory by the University of California, by vote of its Graduate Council. It is a very definite plan, easily put into practice, but no application of it has been made; no new members have been nominated.

Is the failure to nominate due to the fact that the members of the Association are unanimous in the view that the membership should not be enlarged? Hardly so; that this question has been proposed and that the Executive Committee has adopted it for discussion give evidence that some of us are in doubt, would perhaps welcome to membership some institutions not in the initial organization. Our hesitancy must be due either to ignorance of the conditions existing at the more recently organized graduate schools, or, perhaps, to a fear that the candidates which we should like to nominate might fail of election and thus be subjected to an unpleasant notoriety.

Granting that we adhere to our present method of nomination and election, we seem therefore to be urged to the formulation of a guiding principle that shall help us to a correct appreciation of the merits of those institutions whose claims to the privilege of representation in the Association may be presented for our consideration. A strict rule we have decided not to have, but a guiding principle may be possible. I offer for your consideration the following declaration:

"The maintenance of a well-organized graduate school and the insistence upon high ideals of scholarship in graduate study shall constitute the basis of the selection; and the Association invites to membership every university that can fairly meet such a standard."

The graduate school which is so in fact, and not merely upon paper, has certain characteristics by which it may be recognized; it has adequate funds, it has able teachers, it has capable students, it has a good organization, it has the university atmosphere, and it must have, not some of these gifts, but all of them, if it fulfills its promise of efficient guidance to the students whom it attracts to its halls.

Of these prime requisites the last is at once the most essential and the most difficult to attain; essential because it implies the existence of nearly all the other essentials, and difficult because men able to create it are rare, and governing boards are not always good judges of such men. The scholarly man is so by virtue of his bringing up, not by virtue of his talents or special acquirements; he is so because he has lived in a scholarly atmosphere long enough to have acquired the scholar's instinctive habits and insights. These, by daily contact with his pupils, he imparts in turn to them, and thereby attains to the rank of the genuine university teacher. He is the severe but kindly critic, with a keen discernment for right and wrong tendencies in the work of his students; able therefore to guard them against wasting time upon trivial matters. A trivial thesis or a strong subject treated weakly cannot pass muster with an able scholar.

The university may be said to exist for the purpose of transmitting from one generation to another these high ideals of scholarship, though the modern university is something more than this; for in these ideals it includes specialism. Yet specialism in itself is not the university. It is a valuable means to an end, an important instrument in the process of mind-making, but as an end in itself it belongs to the technical and industrial side of education; and by all means let us not misname the technical school a university. The schools of law, of medicine, and of engineering are properly parts of a university system, but the aims of such schools are somewhat antagonistic, I take it, to those of a graduate school proper, and to that extent they do not help, but hinder, the development of those ideals of university life which we design to foster in this Association.

Our most important *tangible* criterion of a university's value, then, is to be found in the known ability of its men, as scholars, teachers, investigators, and in the amount of time its men of acknowledged ability are permitted to devote to the interests of its graduate school. We shall have to take it for granted that a group of men of the proper stamp will ultimately create and maintain university standards and the university atmosphere, provided adequate material resources are theirs for that purpose, enabling them to make the graduate school their most important concern.

Ample funds are therefore a third prime requisite for the maintenance of a graduate school. This fact is so evident that I shall not dwell upon it; but it is a consideration which we should not leave out of account. I think we should all agree that an institution struggling to maintain an organized graduate school with markedly inadequate resources should not have the indorsement which membership in this Association would give.

Lastly, there must be students, and a plan of study for them; students who are capable of sustained effort and systematic courses of study in the higher reaches of learning; students not handicapped by the necessity of piecing out a defective undergraduate training and courses not scaled to the capacity of the undergraduate student; students whose entire time is available for study, and courses whose entire range is in some advanced field.

A good organization, however, does not merely provide systematic instruction; it also governs the conduct of students and faculty; it enacts laws by means of which the conferring of the higher degrees is properly safeguarded; it fixes responsibilities definitely upon persons qualified to bear them; in particular it devises checks by means of which departments weak in resisting power are fortified against appeals for favor. In a graduate school of long standing such safeguards as these might easily exist without formality of statute; in a new school, not so; and the absence of good organization, in a given case, might constitute good ground for an adverse vote on the question of proposed membership in this Association.

I repeat, therefore, that, for the purpose of forming a just estimate of the claims of any institution to membership in the Association, we need to have definite answers to the following questions: Has it adequate funds, able teachers, a good organization, capable students, an environment of university ideals? In brief, does it maintain a well-organized graduate school and insist upon high ideals of scholarship in graduate study? If some of these things are difficult to define, they are nevertheless well understood by all who have been in residence at the great seats of learning.

I call attention to the fact that the effective electors of the Association are our colleagues in the various graduate schools here represented. The proper authorities in those schools are requested to instruct their delegates with a vote upon the candidate approved for membership by the Executive Committee. The word *requested* evidently means that the various schools may use their discretion; they may instruct their delegates with a definite vote, or they may instruct them to form their own judgment at the annual meeting, when the discussion upon candidates and the voting take place.

But in any case it is desirable, it seems to me quite essential, that a thorough canvass of proposed new members should be had first, not here, but at the several universities, where the knowledge of many persons can be brought to bear. The delegates sent to this conference do not represent all the departments of university work, and many of us would find it impossible to vote intelligently upon any candidate that might be proposed without the aid of a considerable amount of first-hand information. A subsequent canvass at our annual conference would then be effective.

I wish to emphasize the importance of first-hand knowledge in this matter. Catalogues or announcements of courses are not trustworthy sources of information. A hundred names of graduate students in our catalogues does not always mean a hundred students pursuing strictly higher courses of study; on the contrary, it may mean perhaps a few, perhaps none. What it really does mean we need to know. There are a few universities, not members of this Association, that have upon their rolls more than a hundred graduate students, and there are several others that have more than fifty. But what these young people are doing the catalogues do not inform us. There were eleven graduate students at Harvard in 1812, but I very much doubt if graduate instruction was given by Harvard College at that time. A graduate department was organized at Yale College in 1847; should we recognize such a department now as fulfilling the duties of a well-organized graduate school? Was there anything different in Yale College at that time from the spirit and method of an undergraduate school? Such questions as these will undoubtedly force themselves upon our attention whenever new members are proposed.

Therefore, let each nomination be accompanied by definite information, not only concerning the number of graduate students in attendance, but also concerning the character of their performance, concerning the ability and standing in the

scholastic world of the men who are their sponsors, concerning the resources available for research, concerning organization, and last, not least, concerning the attitude of both faculty and students toward the scholarly ideal.

With such information at hand the votes of the various universities represented in the Association may be safely trusted. If the membership of the Association is enlarged by that process, we shall heartily welcome the new members.

A second question concerning the membership of the Association is important : *Should separate institutions devoted to theology, law, medicine, or the applied sciences be eligible to membership ?*

The answer which my colleagues give to that question is a definitive No. The reasons for this answer are practical. The task of deciding what institutions among the hundreds existing in America should be invited to membership would be an impossible one. The expert knowledge necessary for such a task exists only in small measure in this Association. I feel sure that we do not want to stir up the animosities that would at once arise if we should undertake it.

The Association ought, however, to welcome the formation of parallel associations composed of the various professional schools, and might advantageously co-operate with them.

I shall answer the second question which is a part of our topic of discussion very briefly.

Should the Association devote its attention wholly to questions concerned with the organization and conduct of graduate work; and, if so, should graduate work in law, medicine, theology, and the applied sciences be included ?

My answer is : The Association should devote its attention chiefly to questions concerned with the organization and conduct of graduate work in the philosophical and scientific faculties proper ; not, however, to the exclusion of scientific or educational questions pertaining to professional study.

Most of our universities maintain schools of law, medicine, theology, or technical science. Is there any reason why we should refuse to discuss any questions vital to our university organization ?

Important scientific and educational questions are involved in the organization and conduct of some of our professional schools, and such questions are likely to assume greater importance as time passes. Let there be drawn no hard and fast line here, but rather let the Executive Committee be free to make up our program each year in accordance with its best judgment.

Our constitution need not be changed for this purpose ; it does not restrict either the choice of topic or the choice of delegates. If the Association has set the precedent that only topics relating to the graduate schools may be discussed and only delegates engaged in giving instruction in such schools may be sent to its meetings, it may reverse that precedent at any time by a simple change of practice.

**DISCUSSION ON "THE MEMBERSHIP AND POLICY OF THE ASSOCIATION
OF AMERICAN UNIVERSITIES"****MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:**

At the last meeting of the Association I advocated upon my own responsibility the enlargement of our membership. In the year that has since elapsed the matter has been discussed by the University of Pennsylvania, and the policy of the university has been decided. We are instructed to speak in favor of the general principle of admitting other institutions to the Association.

The present constitution of the Association is rather a matter of accident than of design. The fourteen universities included within its membership were originally invited to a conference at Chicago for a totally different purpose. The idea of organizing this Association was an afterthought. It was brought before the conference and approved by the delegates present, and was afterward accepted by the institutions represented.

We can see no reason why we should now persist in a policy the inception of which was purely accidental and which seems to us to present manifest disadvantages. The chief value of the Association in our eyes lies in the fact that in it many of the men who are in control of the evolution of higher education in this country meet face to face and can thus discuss matters of university policy, give and receive suggestions, and come to a better understanding. It is quite possible that such an association may develop into a useful instrument for the fashioning of our national educational ideals. This, however, it can scarcely be if its membership is to be restricted to a mere handful of universities, even though collectively they at present may perhaps be regarded as wielding the greatest influence. There still remains a large number of institutions which are justly entitled to the name of university, which are today doing, within their spheres of influence, what the greater universities are doing on a larger scale, which are governed by men who are carrying into effect good academic ideals so far as their means allow, and which will in a few decades rank with the greatest universities. We can see no reason whatever why these institutions should be excluded from this Association. Their absence is a loss; their presence would be a gain.

Upon one minor point also a word might be said. We call ourselves the Association of American Universities. If we retain this title and at the same time adhere to our policy of exclusion, we are seemingly denying to the institutions of which I have been speaking the right to bear the name of university. I do not, of course, mean that such is the actual intention of any member of this Association. I merely call attention to the fact that this construction might be, and probably will be, put upon our actions.

Upon the second question touched upon in the above paper—"Should the Association devote itself wholly to questions concerned with the organization and conduct of graduate work; and, if so, should graduate work in law, medicine, theology, and applied science be included?"—we have received no instructions from our university. My own opinion is that which has already been so well expressed by others. If this Association is to reach its full measure of usefulness, its scope should be broad enough to include all questions with which our universities are concerned.

MR. PENNIMAN, OF THE UNIVERSITY OF PENNSYLVANIA :

The discussion thus far has apparently been an attempt to determine whether medicine and law are to be called graduate work. It seems to me that the real question for the Association of American Universities to discuss is whether we are to enlarge the scope of our work so as to make it possible for us to discuss freely and frankly in our meetings any problems that may arise in connection with the work of an American university. It seems to me unnecessary for us at this juncture to decide whether medicine and law are, in the narrow sense of the word, to be regarded as graduate studies. Many of the universities here represented have medical and law departments, concerning which there are continually arising problems of the greatest interest, and not infrequently of the greatest difficulty. A discussion of some of these problems with the representatives of other universities having similar schools might be of value to all concerned.

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN, urged that the scope of our graduate courses be widened, so that graduate work in applied science, as well as in medicine, law, and theology, should receive adequate recognition in our plans and discussions. As representing the University of Wisconsin, he made a plea especially for the graduate courses of the college of engineering.

MR. D'OOGE, OF THE UNIVERSITY OF MICHIGAN :

1. While I am in general accord with the views expressed in the paper just read, the policy of this Association should, it seems to me, be as liberal as possible with due regard to the basis of its membership. The older and stronger universities may, through this Association, be of great service to the younger that are not so fully developed. The strength and character and rank of a university are not to be determined solely by the equipment and size of its graduate school.

2. The Association should be inclusive rather than exclusive in the scope of its discussions. All graduate work in any department or school should receive attention and be discussed in the deliberations of this body. This is especially desirable in view of the fact that in so many of our universities studies in the professional and technical schools are included in the work that is done by candidates for the degree of Doctor of Philosophy, and that studies in the various departments of a university shade into one another; and also for the reason that, because of this, members of faculties of professional and technical schools are also members of graduate councils or committees charged with postgraduate work.

MR. NEILL, OF THE CATHOLIC UNIVERSITY OF AMERICA :

The answer to the question of the advisability of enlarging the membership of the Association is, it seems to me, bound up in the answer to be given to the second question, as to what should be the principle of selection. If the requirement for membership be made to consist in the carrying on, with adequate facilities, of *bona fide* graduate work in the university sense, that is, research work, of the kind required for the doctorate in a first-class university, then an enlargement of the membership could only prove beneficial to the work of the Association by bringing to its discussions a larger number of men, who are engaged in the same lines of work, who are meeting very largely the same sort of problems, and each of whom will, in consequence, be likely to contribute to the discussions of the Association

views and experiences of value to his fellow-workers. To enlarge the membership on any other principle seems to involve the risk of rendering the aims of the Association less definite, its discussions diffuse and heterogeneous, and its usefulness less certain.

These considerations bear directly upon the second question occupying this morning's discussion. The benefits to be derived from the meetings of an association such as this one will depend very much upon the limits of the scope which it sets for itself. To include within its program questions concerned with the organization and conduct of undergraduate work—important as this is—is to invite a dissipation of energy, and to lessen the intensity of the interest felt by members and by delegates in the papers and the discussions occupying the attention of the annual meetings. Should it confine its attention exclusively to problems connected with graduate work, it will concentrate its energies, and will more likely hold the interest and attention of all those engaged in this field of work. The field of graduate work is still so comparatively new and so experimental that it gives promise of furnishing for a long time an abundance of questions for the consideration of the Association.

On the other hand, to exclude from consideration graduate work in the fields of law, medicine, theology, and applied science is, it seems to me, to make a somewhat arbitrary and illogical distinction, and to tend toward limiting the field of discussion much too narrowly. The Association might well embrace within its scope the consideration of graduate work of a university character, irrespective of the particular field in which the study and investigation may be carried on. The test should be the *method* of work rather than the *subject-matter*. The line of demarkation that now exists between the field of study leading up to the Doctorate of Philosophy and the other fields that we are discussing is of historical growth, and its course is largely an accidental one, and seems peculiarly illogical and erratic. Theology, law, and medicine early pre-empted certain fields of study, and adopted their respective degrees. These degrees aimed to mark special training in definite professions, and, in consequence, the subject-matter of study gave a logical basis for the distinctive degrees. The whole field of study not already pre-empted by these earlier degrees seems to have been appropriated by the degree of Doctor of Philosophy; and with the rapid expansion of the domain of knowledge, in every direction, that has taken place since "philosophy" took over the unappropriated field, that term has lost the distinctiveness of its earlier meaning, and has come to be an "omnium gatherum," and the degree of Doctor of Philosophy has come to be what might be termed a "blanket" degree. The studies now carried on under faculties of philosophy in most modern universities, and which lead up without discrimination to the degree of Doctor of Philosophy, form a heterogeneous aggregation, embracing branches of knowledge of all degrees of correlation; and many of the subjects thus grouped together are less closely correlated with one another than they are with studies embraced in the field of work leading up to the Doctorates in theology, medicine, or law. The justification for making study in such comparatively unrelated fields lead up to the one degree, Doctor of Philosophy, must be sought in the method of study common to them all. But with the development of the modern university spirit the method of graduate study in schools of theology, law, and medicine has in turn undergone change; and the best of these schools are now at the same time professional schools and places of university research. It seems illogical, therefore, to include within our scope subjects as comparatively unrelated as, for example,

history and politics, on the one hand, and chemistry or biology, on the other, and at the same time exclude from consideration graduate work in such fields as constitutional law and comparative administrative law, or in medicine and bacteriology, which in turn are more closely related to the respective groups first mentioned than these groups are to each other, and this, too, when graduate work in all these fields is coming more and more to have a distinctively university character. My own experience with our work in Washington only confirms me in holding as a practical view what seems from the first to be a logical attitude. We are at present carrying on graduate work under three faculties—theology, philosophy, and law. The university confers Doctor's degrees in theology, philosophy, or law, according as the preparation has been carried on under the auspices of these respective faculties. The character, the grade, and the method of work under each faculty are very much the same; and if it were not for historical precedent, or for professional preferences, there seems to be no good reason why the degree of Doctor of Philosophy—its character being what it is at present—should not be conferred for work done under the theology or law faculty as much as for work done under the faculty of philosophy. In fact, the relation of the particular Doctor's degree to the work done for attaining it seems in many cases to be little more than accidental. Perhaps I can better illustrate what I am trying to express by giving a concrete example or two.

A student who has taken his Baccalaureate and his Licentiate in theology takes up work under our faculty of theology for the Doctorate in that field. He specializes in the field of moral theology, and takes for his dissertation work the nature and history of the doctrine of usury. History and economics will enter largely into his study, and in these branches he will be working under teachers in the faculty of philosophy. His dissertation will be what we would ordinarily term a piece of historical work, done by one whose training in theology gives him a peculiar vantage ground from which to study his subject. His whole course of study and work has been carried on, not at all as the mere training of a professional school, but according to the method and spirit that we regard as characteristic of university work. As a matter of fact, his work has all been of a sort that would be accepted in any university for the Doctorate in philosophy, unless it were for the fact that part of his work had been in the field of theology. But this seems to me a purely arbitrary distinction. In fact, so closely is the study of theology correlated with many phases of secular history that it would not be at all difficult to point out today numerous cases of historical study and dissertation work, carried on under faculties of philosophy, which would have been much better understood and elucidated had some subordinate study in theology been demanded. Again, to take an example from another department of the school of theology, so called—its official, and more correct, designation is the School of the Sacred Sciences. A student may enter for his Doctorate in theology, and take his major work in Scripture. His minor work would lie largely in the department of Semitic languages, or of Greek, both of which are in the school of philosophy. His study in Scripture itself would be critico-historical, and his whole work and his dissertation would in many cases not be distinguishable from work in another university for the Doctorate in philosophy in the field of Semitic languages and archæology.

The points I have tried to suggest for consideration are even more clearly seen,

perhaps, in the case of graduate work in law. (And here I do not mean any study in law carried on by a student who has merely taken a Baccalaureate in arts, but rather advanced study in the field of law carried on by a student who has taken his Baccalaureate in law, and who goes on for a Doctorate in that subject.) The particular field in which the candidate for a Doctorate in law specializes, and the nature of his dissertation work, are frequently of the sort that would be readily accepted for the Doctorate in philosophy, in history, and political science ; and the candidate's preference for a law Doctorate may be merely from professional considerations.

It seems to me, therefore, that the Association ought not to decide to exclude from its consideration the organization and conduct of graduate work in law, medicine, theology, applied science ; but that, on the contrary, it ought to include the consideration of these fields within its scope. A university organization which will allow of the closest correlation between the work done in these fields and that carried on under faculties of philosophy will tend very much to broaden and to strengthen the character of the work done for the Doctorate in philosophy, and it will at the same time operate in the direction of making graduate work in the fields of theology, law, etc., take on more and more of the nature of that scientific research which is the mark of the modern university ; and both of these ends are equally to be desired.

MR. MAGIE, OF PRINCETON UNIVERSITY:

The most interesting question to me in this discussion is that of the admission of the smaller colleges and universities to the Association. There are many of them in which at least one department, and frequently more than one, is conducted by university methods. There is probably no one of them which has no prospect of developing into a well-rounded university. To exclude them from the Association would put them unfairly at a disadvantage in the struggle for university existence. Is it not our duty to put no hindrances in the way of their free development, a duty which we owe in fairness to them and to our country? And should we not therefore adopt a policy of liberal inclusion of all those institutions in which university methods have taken root, and in which there is a prospect of the growth and spread of the university spirit ?

MR. PERRY, OF COLUMBIA UNIVERSITY:

The delegates from Columbia University took no active part in this discussion. It is their opinion that the Association, if carefully managed, may well and properly become a most important factor in the development of the higher education as a whole in this country. To this end its membership should be increased only very slowly. Very few institutions in the United States which carry on true graduate work to any appreciable extent are unrepresented in it ; and other institutions should be admitted to membership in it only as they show substantial results already accomplished, and serious intention and promise of progress in this direction. The encouragement of true graduate work in law, theology, medicine, and applied science is greatly to be desired ; but the professional schools in most universities stand on so different a footing from the "graduate schools" that questions connected with them offer peculiar difficulties which vary with each locality and hence are less likely to be soluble in conference.

The subjects bearing upon the development of "non-professional" graduate work which can be profitably discussed in such meetings as these are not very numerous, nor need they be debated at frequent intervals; and there are already several associations in existence whose meetings give abundant opportunities of discussing strictly collegiate questions, so that, unless this Association looks to the provision of new topics for consideration, it will necessarily soon expire by limitation, not statutory, but nutritive.

It may also be pointed out that the line of demarkation between "professional" and "non-professional" faculties is sure to be gradually obliterated, in so far as the insistence of a first degree is concerned; and it seems to us that this Association could not be better engaged than in quietly but steadily furthering the adoption of this requirement. Besides, such an institution as Teachers College at Columbia is a professional school in the best sense, and is frankly recognized as such, while most intimately connected with the faculty of philosophy.

MR. BRIGGS, OF HARVARD UNIVERSITY:

The second question in the program seems to me a question whether the Association is to make a radical change in its purposes. If it does not mean to change its policy radically, a few more universities may doubtless be admitted on the ground that they belong in it as much as some of its present members belong in it; if it means to change its policy radically, all sorts of questions arise: questions whether even those professional schools which admit no student without a Bachelor's degree are doing graduate work in the ordinary sense of the words; questions whether universities which do not require the Bachelor's degree for admission to their professional schools may, through admission to the Association, be induced to require such a degree, and may, therefore, be wisely admitted to the Association; and questions whether the higher colleges in which the spirit of learning is strong and from which admirable men go to our best graduate schools may not be admitted also.

1. What one speaker has said about the spirit of graduate schools seems to me one of the discouraging things in regard to them. I have in mind the unwillingness of Doctors of Philosophy to do secondary work, the impossibility of finding college places for them all, and the unsuitableness of many of them for work in schools, even if they are willing to take such work. I am much interested in what Professor West has said about the failure of graduate schools to attract a just share of the best intellectual strength in the country.

2. If the Association should invite to membership institutions whose work in their professional schools is not graduate work and which do no graduate work, in the strict sense of the words, but admit to their professional schools students who are not college graduates, the Association might help those institutions to make their professional schools graduate schools and might raise the standard of professional work in universities; but, if the Association should so far widen its field as to take in such institutions, there are some *colleges*—which, so far as I know, are colleges only—that might well be considered. I do not know that any of us would vote for the admission of these colleges, or that they would care to be admitted; but I can think in particular of one college which sends us every year a few admirable students, who enter our Senior class, and some of whom do graduate work with us. The spirit of that institution is an encouragement to the higher learning; and its students make exceptionally promising material for graduate schools.

THE THIRD SESSION

REPORT ON STATISTICS CONCERNING THE MIGRATION OF
GRADUATE STUDENTS

PAPER READ BY MR. E. A. BIRGE, OF THE UNIVERSITY OF WISCONSIN

The discussion at the meeting of this Association last year, on the subject of graduate migration, showed that the participants entertained very different ideas regarding the nature and extent of such migration. It was, therefore, voted that the subject should be investigated, and President Butler appointed me as a committee to prepare a report for this meeting. I was asked to collect statistics, both for German and American universities. I understood, however, that the report on the German universities need not be exhaustive, but was intended to permit a rough comparison between migration in Germany and in this country.

It seemed best to limit the investigation to the migration of those persons who have received the degree of Doctor of Philosophy during the years 1896-1901 inclusive, and to students who are now in their last year of study for the Doctor's degree, after which time it is probable that no further migration would take place. Report cards were sent out to all universities in the Association, requesting detailed reports for each person falling under these categories. Each individual was reported on a separate card, which showed the following facts: (1) the institution from which the Bachelor's degree was obtained; (2) the place of study during each year of graduate work; (3) the department in which the major study for the degree was taken; (4) fellowships or other similar positions held by the person reported.

I received no reports from Clark University, in which institution, however, there is probably little or no migration. Princeton University reported, in general terms, that candidates for the Doctorate were encouraged to study in Europe. The Catholic University of America reported that very few degrees of Doctor of Philosophy had been granted by that institution, owing to the peculiar nature of its graduate work. It is not probable that reports from these universities would have altered essentially the statistics which I received from the other eleven institutions.

The universities which reported sent in altogether 1,437 reports, of which 1,168 related to persons who had received the degree of Doctor of Philosophy, including two Doctors of Science from the University of Michigan. Two hundred and sixty-nine reports related to students in their last year of graduate study. The reports from the several universities varied greatly in number. The University of California sent 15, and the Johns Hopkins University reported 244. In four of the institutions the total number of the reports was smaller than 50, while the smallest

number found in the other seven was 124. It is evident that the value of the statistics of migration from the colleges reporting the smaller number of degrees is much less than from the other institutions, but the percentage of migration in these colleges does not differ widely from that found in the others.

The following table gives the general results of the investigation. The first column shows the number of Doctor's degrees granted between 1896 and 1901, the number of migrants, and the percentage of migration. It will, of course, be understood that by migrants are meant those persons who pursued graduate study in more than one university. A change of university immediately after receiving the Bachelor's degree is not considered as migration. Attendance at summer session was reported for a very few students, but such attendance was not considered as constituting migration.

The table also shows the number of students now in their last year of study for the Doctorate, with the number and percentage of migrants; and the total resulting from adding these two classes of reports.

TABLE I. GENERAL RESULTS

	Ph.D. Degrees 1896-1901	Migrants	Per Cent.	Students 1901-02	Migrants	Per Cent.	Total	Migrants	Per Cent.
California	12	2	17	3	0	0	15	2	13
Chicago	176	95	54	43	18	42	219	113	52
Columbia	127	47	37	34	16	47	161	63	39
Cornell	94	42	45	30	14	47	124	56	45
Harvard.....	156	47	30	29	13	45	185	60	32
Johns Hopkins ..	221	29	13	23	8	35	244	37	15
Leland Stanford ..	13	5	42	3	0	0	16	5	33
Michigan	27	9	33	13	6	46	40	15	38
Pennsylvania.....	125	48	38	38	18	47	163	66	40
Wisconsin	35	21	60	13	7	54	48	28	58
Yale	182	10	5.5	40	3	8	222	13	6
Total	1,168	355	30	269	103	38	1,437	458	32

It is unnecessary to discuss this table in detail, since its figures in general speak for themselves. In two of the institutions the number of students is very small and no migrants are reported. In all of the other reports, except that from the University of Chicago, the percentage of migration among the students now in attendance is greater than the average of migration among the Doctors. The decline in the number of migrants at Chicago would be expected as the university became older.

The average results, as shown in Table I, have no very great value, since the amount of migration in the different universities has an almost tenfold range. It is smallest at Yale, where only 6 per cent. of the students have migrated, and greatest at Chicago and Wisconsin, where 52 and 58 per cent. respectively have studied at more than one university.

Table II shows the number of degrees, students, and migrants reported from each university, arranged by years. The numbers given in this table will not aggregate the totals of Table I, since Chicago reported sixteen degrees from 1895 and Leland Stanford one from 1894, which were included in Table I. In a very few cases the reports were not dated. Considering the totals of Table II, it will be seen that the percentage of migrants increases in general during the later years, but that there is a very considerable rise in 1900, with a decline in 1901, and a subsequent recovery in 1902. There is also an indication of a division of the years into two sets: one including the first four years and the other the last three. This increase is not wholly due to any particular class of migrations, although the most considerable enlargement was usually among students who had studied only at non-Association colleges, from which they had received their Bachelor's degree, as explained in the latter part of this report. It may be interesting to note that Dean Wright's last report on the graduate school at Harvard (p. 127) shows about the same percentage of migration in that university among all the graduate students that was reported among those who are now in their last year of study for the Doctor's degree.

It will be noted in this table that, while the percentage of migration varies very greatly in the individual college from year to year, the general character of the relation between degrees and migrants remains fairly constant for each institution.

TABLE II. DEGREES (D) AND MIGRANTS (M) BY YEARS

	DEGREES												STUDENTS	
	1896		1897		1898		1899		1900		1901			
	D	M	D	M	D	M	D	M	D	M	D	M	S	M
California.....	3	..	1	..	2	1	2	..	2	1	2	..	3	..
Chicago.....	22	13	32	14	30	15	24	13	34	21	18	8	43	18
Columbia.....	11	2	16	7	21	9	37	12	16	6	26	11	34	16
Cornell.....	14	6	11	6	23	7	8	3	18	10	20	10	30	14
Harvard.....	18	5	25	..	26	8	23	8	35	18	29	8	29	13
Johns Hopkins.....	36	3	42	2	36	6	42	6	35	3	30	9	23	8
Leland Stanford.....	4	2	4	1	..	..	2	2	..	..	2	..	3	..
Michigan.....	1	1	5	2	6	1	4	1	7	2	4	2	13	6
Pennsylvania.....	18	4	23	7	24	6	20	10	15	8	25	13	38	18
Wisconsin.....	5	4	9	5	5	4	5	2	5	4	6	2	13	7
Yale.....	31	3	22	4	34	1	30	..	26	1	39	1	40	3
Total.....	163	43	190	48	207	58	197	57	193	74	201	64	269	13
Per cent. of migrants.....	26		25		28		29		38		32		38	

In Table III and those which follow, the two classes of reports, those from persons who have received the Doctorate and those from students now in their last year of graduate study, are mingled, and no attempt is made to distinguish between them.

Table III shows the relation between degrees and migrants, as arranged by departments. Under the heading "Philosophy" are included, with philosophy, psychology and education. With "Economics" are included political science, statistics, and sociology. Under "Ancient Languages" are reported Latin, Greek, Sanskrit, Hebrew, and classical philology. "Modern Languages" include German and the Romance languages. "Biology" includes zoölogy, botany, physiology, natural history, and bacteriology. Astronomy is included in "Mathematics." One thesis in electrical engineering has been included under "Physics," and one in mining was placed under "Geology." A few theses could not be classified under any of these headings, and are consequently omitted; and several reports were received in which the name of the major subject was not stated.

From the average results it appears that English, chemistry, and mathematics have the smallest amount of migration, while economics and modern languages show the largest percentage of migrants. It will be seen from the details of the table that the percentage of migration is perceptibly lower in those departments in which Yale has granted a large number of degrees, although it would still remain true that, even were the statistics from Yale excluded, the percentage of migration in these departments would remain small. The high percentage of migrants in the departments of modern language is caused by study in Europe. Of the forty-six migrants there enumerated, twenty-five were students in Europe. The modern languages included 6.8 per cent. of the degrees and 22.5 of the students in Europe. No such cause exists for the high percentage in economics.

The table also shows that there is a great difference between the several departments of single institutions in regard to the amount of migration. The difference between philosophy and several other departments in the University of Pennsylvania is perhaps the most conspicuous illustration of this.

TABLE III. DEGREES (D) AND MIGRANTS (M) BY DEPARTMENTS

	Philos- ophy	History	Economics	Ancient Lang'ages	Modern Lang'ages	English	Mathem- atics	Physics	Chemistry	Geology	Biology
	D M	D M	D M	D M	D M	D M	D M	D M	D M	D M	D M
California.....	2 ..	.. ..	.. ..	.. ..	.. ..	.. ..	3 ..	.. ..	1 ..	6 ..	2 ..
Chicago.....	16 8	20 8	28 15	49 21	15 10	13 4	12 6	5 3	14 8	8 7	38 22
Columbia.....	28 16	8 3	35 17	22 4	7 3	5 1	11 2	5 3	14 4	5 2	21 8
Cornell.....	28 8	7 2	10 7	8 3	8 7	12 4	4 2	19 6	8 4	3 1	17 8
Harvard.....	26 11	15 7	13 4	34 11	13 3	22 6	7 ..	9 4	18 2	3 ..	20 10
Johns Hopkins	.. ..	27 2	14 1	41 5	22 7	17 1	14 ..	25 6	48 6	15 5	21 4
Lel'd Stanford	.. ..	.. ..	2 1	2 1	1 1	1 ..	4 ..	2 2	.. ..	.. ..	5 1
Michigan.....	3 1	2 ..	5 1	10 5	5 3	4 ..	1 1	3 2	.. ..	.. ..	5 2
Pennsylvania....	22 1	19 10	23 16	15 7	15 10	16 5	14 7	1 1	25 5	1 ..	18 3
Wisconsin....	2 2	8 4	15 9	5 5	2 1	3 1	3 ..	2 2	4 2	3 2	1 ..
Yale.....	29 ..	22 2	14 2	31 2	10 1	42 2	15 1	12 1	30 2	5 ..	12 ..
Total.....	156 47	128 38	158 73	217 64	98 46	135 24	88 19	81 30	165 35	49 27	154 59
Migrants..	30%	30%	46%	30%	47%	18%	22%	37%	21%	35%	38%

Study of the reports showed that the mere enumeration of the cases of migration was not sufficient, but that the migrants ought to be classified so far as possible. Table IV was prepared for that purpose. One class of migrations was clearly distinguished from the rest—that in which the student, having taken his Bachelor's degree at one of the smaller colleges, pursued graduate study there and then migrated to one of the reporting universities and completed his course for the Doctorate at that institution. One hundred and forty-five, or nearly one-third of the migrants, were of this character. These are reported in *A*, Table IV. It will be seen that nearly one-half of them belonged to the University of Chicago. A closely allied class is reported in column *B* of Table IV, where the student has pursued graduate work either at one of the smaller colleges, which did not grant the Bachelor's degree, or at a small college, in addition to that which granted his Bachelor's degree. In a good many of these cases the person was instructor or assistant in the institution from which he migrated to the larger university. It seems to me that most of these cases cannot be considered as instances of graduate migration in the strict sense. In some instances undoubtedly the student was pursuing studies in an institution granting the Doctorate of Philosophy, and having adequate facilities for carrying his studies on to the Doctorate in his department. Yet this would be true of only a small portion of the cases. In a large majority of instances the institution from which the student migrated belongs distinctly to the class of colleges whose work is chiefly undergraduate, and it was obviously very desirable, if not necessary, that the student should migrate if he were going to carry on graduate study for the Doctor's degree. About 40 per cent. of the migrants were of this character, and, if these were not considered as migrants, the percentage of migration would be reduced to about 18 per cent. This reduction is perhaps not unfair in comparing the migration in Germany and in America.

Columns *C* to *F* in Table IV, including 266 students, represent the extent of the migration between the universities included in this Association (called "Association Universities"), and between these institutions and European universities. The number amounts to a little more than 18 per cent. of the total number of persons reported. The number of students reported as studying in Europe (109) by no means represents the number of American Doctors who have gone abroad for study, since it is probably more common for the American student to go abroad after he has obtained his Doctor's degree than before taking it. It will be noticed that no reference is made to the college granting the Bachelor's degree in columns *C* to *F*.

Study in Europe has been counted as one migration only, even though the student may have pursued work at several European universities. Some of the reporting universities name the European universities at which studies were pursued, while in other cases the report simply stated that one or more years were spent in

Europe. Under these circumstances, it was not possible to make any complete tabulation of the European institutions.

TABLE IV. CLASSIFICATION OF MIGRANTS

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
California	0	0	1	0	1	0
Chicago.....	76	7	23	6	1	0
Columbia.....	13	12	22	3	7	1
Cornell.....	10	4	20	3	12	5
Harvard.....	26	2	12	1	17	2
Johns Hopkins.....	5	4	9	2	10	3
Leland Stanford.....	1	0	1	1	1	1
Michigan.....	3	0	3	1	8	0
Pennsylvania	5	3	29	2	12	15
Wisconsin.....	4	3	9	3	8	0
Yale.....	2	1	5	0	5	0
Total	145	36	134	22	82	27

Besides study at the university granting the Ph.D. degree, the migrants studied as follows: *A*, only at non-Association college granting Bachelor's degree; *B*, at non-Association colleges other than that granting Bachelor's degree; *C*, only at Association universities; *D*, at Association and non-Association universities; *E*, in Europe; *F*, in Europe and at American colleges.

It may be interesting to note the distribution of these various classes of migrants by years, and in the following table they are so grouped. The differences between the details of this table and those of Table IV are accounted for by the Chicago reports from 1895, and the discrepancies between Table V and Table II depend on the fact that certain students had been credited for work done at institutions which could not be classified, such as geological surveys, theological seminaries, etc.

These migrants are grouped under three heads: the first including those who have studied at the non-Association colleges; the second, those who have studied in the Association universities; and the third, those whose migrations extended to Europe.

TABLE V. DISTRIBUTION OF THE MIGRANTS OF TABLE IV BY YEARS

	1896	1897	1898	1899	1900	1901	1902
<i>A and B</i>	17	20	20	22	36	23	41
<i>C and D</i>	15	12	26	19	18	26	31
<i>E and F</i>	8	15	12	15	18	10	31
	40	47	58	56	72	59	103

Table VI shows the amount of migration among the six universities of this Association which are situated along the Atlantic seaboard. The horizontal lines

show the number of persons who received the Doctor's degree at institutions named on the left, and who also studied at other universities. The vertical column shows the number of students in the university whose name heads the column, who took degrees at the institutions named in the left-hand column. Thus, eighteen persons received the Doctor's degree from Columbia, part of whose study was done at the other universities named, and eleven persons who had done graduate work at Columbia took the degree at the other universities in the list. In this table also no distinction is made between those persons who have already taken the Doctor's degree and those who are now in their last year of graduate study.

TABLE VI. MIGRATIONS BETWEEN CERTAIN UNIVERSITIES

PH.D. AT	STUDIED AT							Total
	Columbia	Cornell	Harvard	J. H. U.	Penn.	Yale		
Columbia.....	..	2	11	2	1	2		18
Cornell.....	..	..	5	7	1	..		13
Harvard.....	3	1	..	1	1	..		6
Johns Hopkins.....	2	1	2	..	..	1		6
Pennsylvania.....	4	3	8	8	..	2		25
Yale	2	..	2	1	..	..		5
Total.....	11	7	28	19	3	5		

It may be of interest to note that of the 458 migrants, 395 pursued graduate work at one institution besides that granting the Doctor's degree; 51 at two such institutions, or three in all; and 12 carried on graduate work at four or more universities.

In Table VII are summarized the classes of institutions from which the students received their Bachelor's degrees, with the purpose of ascertaining the effect on migration of what may be termed "college loyalty." Column A shows the number of Bachelors of the reporting universities who have received Doctor's degrees from the universities included in the Association. The number was 573, or about 40 per cent. of the total number of students reported.

Column B shows the number of these Bachelors who received the Doctor's degree at the institution which granted the Bachelor's degree. It will be noticed that a much smaller percentage of the western students received the Doctor's degree from the university in which their undergraduate work was done than is the case in the eastern institutions. Twenty Bachelors of Leland Stanford have received the Doctor's degree from the reporting institutions; only eight of them from Leland Stanford. At the other extreme stands Pennsylvania, forty-five of whose Bachelors are reported as receiving the Doctorate, and forty-four of them at Pennsylvania. On

the whole, something more than 75 per cent. of the Bachelors received their Doctor's degree at their own university.

Column *B* also shows the number of migrants among those persons who took the Doctor's degree at the university which granted the Bachelor's degree. The number of migrants is seventy, or about 16 per cent. of the whole number.

Column *C* shows the number of Bachelors and migrants from the other Association universities, among whom there is an average of 53 per cent. of migration. The difference between the total of *A* and the sum of *B* and *C* depends on the presence in the former number of eight Bachelors of Princeton University.

Column *D* shows the number of Bachelors and migrants from other colleges than those included in the Association, with about 37 per cent. of migrants.

TABLE VII. BACHELOR'S DEGREES AND THEIR EFFECT ON MIGRATION

	<i>A</i>	<i>B</i>		<i>C</i>		<i>D</i>	
		D	M	D	M	D	M
California.....	28	11	2	2	0	2	0
Chicago.....	35	29	2	31	16	159	92
Columbia.....	30	26	3	28	16	107	41
Cornell.....	53	31	10	10	5	83	39
Harvard.....	91	70	14	17	7	92	39
Johns Hopkins.....	47	43	3	19	12	173	22
Leland Stanford.....	20	8	1	2	1	6	3
Michigan.....	50	23	8	2	0	15	5
Pennsylvania.....	45	44	7	20	17	75	42
Wisconsin.....	36	23	12	4	4	21	12
Yale.....	138	125	8	13	1	84	6
Total.....	573	433	70	148	79	817	301
Migrants.....			16%		53%		37%

A, number of Bachelors of each university who are reported as receiving the Ph.D. degree; *B*, number of *A* taking the Ph.D. degree at the university conferring the Bachelor's degree, and number of migrants; *C*, number of Bachelors and migrants from other Association universities; *D*, number of Bachelors and migrants from other colleges.

The percentage of migrants among those Bachelors who took the Doctor's degree at their own university is very much smaller than the average. A very large part of this migration (49 out of 70) is accounted for by those students who studied only in Europe and at the institution from which they took their Bachelor's degree. If these are excluded, the remaining migrants will amount to only about 5 per cent. of the total. It is thus obvious that those persons who pursue graduate work at the university from which they have received the Bachelor's degree are not disposed to migrate to other American institutions.

It must be recognized that conditions of residence will very frequently determine whether the student migrates or not, and that the same forces which induce a

student to take his college course in the university near which he resides will operate to keep him there for graduate study. Yet very few of the many graduates of these institutions who must reside in cities where other Association universities are situated pursue graduate work in those universities. I must, therefore, believe that this adherence of the Bachelors to their own university cannot be accounted for wholly by the facts of residence, but that college sentiment is a strong factor in preventing them from migrating.

I had hoped to be able to report on the effect of fellowships and scholarships as inducing migration, but, after careful study, I concluded that the returns which I had were not adequate for that purpose. In a considerable number of cases the institution reporting did not state whether the student held any such position, and in a much larger proportion of cases it was not stated whether the student held the position of fellow or scholar at the institution from which he migrated. Under these circumstances it did not seem to me possible to get any profitable conclusion in this matter from the reports.

In general, however, it is obvious that the presence of fellowships and scholarships, and the methods of granting them, are an important factor, both in producing and preventing migration.

The following statistics of migration from German universities are presented, not as furnishing any accurate results, but as permitting a rough comparison between conditions in that country and this. Theses of 140 Doctors from the University of Berlin were examined, and 200 from several of the smaller German universities—Halle, Kiel, Giessen, Erlangen, Jena. These were dated between 1896 and 1901, and were distributed through all departments of study. The number is so small that no profitable conclusion can be drawn regarding the effect of the department on migration. The general results are shown in Table VIII, which may be compared with Table I.

TABLE VIII. MIGRATIONS AMONG 340 GERMAN DOCTORS OF PHILOSOPHY, 1896-1901

	BERLIN		OTHERS		TOTAL	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Attended 1 university.....	58	41	61	31	119	55
" 2 universities ...	57	41	93	47	150	44
" 3 " ...	21	15	40	20	61	18
" 4 " or more ...	4	3	6	3	10	3

The following conclusions seem justified by the statistics given above:

1. Comparing graduate migration in Germany and America, it appears that about two-thirds of the German Doctors of Philosophy have studied at more than

one university, while in America less than one-third have migrated. The migration of graduate students between the universities in this Association, and between these institutions and European universities, includes less than one-fifth of the total number of persons reported.

2. The amount of migration is so different in the several universities of this Association that average results are of little importance. The amount of migration in each university seems to remain fairly constant. There is a distinct, though small, increase of migration in almost all of the universities in the later years of the period considered.

3. Migration varies in different departments of study, yet no definite relation between department and migration can be ascertained except in modern languages, where the amount of migration plainly depends upon study in Europe.

4. Among causes affecting migration may be named: (a) superior facilities for study, inducing migration from a smaller college to a larger university; this determines at least one-third of the migrations; (b) scholarships and fellowships both favor and hinder migration to a large, but indeterminable, extent; (c) sentiment toward the institution granting the Bachelor's degree tends strongly to prevent migration.

DISCUSSION ON "REPORT ON STATISTICS CONCERNING THE MIGRATION OF GRADUATE STUDENTS"

MR. WEST, OF PRINCETON UNIVERSITY:

Mr. West advocated the proposition that the Association should in some way recommend to the various universities which compose it a comprehensive plan which should be applicable to all the universities possessing graduate departments.

MR. PERRY, OF COLUMBIA UNIVERSITY:

Concerning the statistics of migration so carefully and thoroughly collected by Dean Birge, Mr. Perry observed only that without much explanation such statistics are sometimes not only difficult of comprehension, but actually misleading. This is particularly true in the case of some of the German statistics, the causes leading to student migration being there very various. For example, some half-dozen of the German universities have for generations been known as "summer universities," the attendance at such in the summer semester sometimes exceeding by several hundred that of the winter. It is also not uncommon for students to take their examinations at universities where they have not resided at all, the almost complete parity existing between the universities of the German empire, with some of those of Austria and Switzerland, making this possible. At Berlin in particular the cost of the Doctorate in philosophy is high, and the faculty proverbially hard to satisfy, while the advantages for study are on the whole greater than elsewhere. No American university seems as yet ready to adopt such a principle; in fact, it has hardly been discussed.

MR. HADLEY, OF YALE UNIVERSITY:

The statistics furnished by Yale do not show the full degree of migration, because many of the students who come from other colleges for their early years of graduate instruction are advised to become candidates for the Bachelorship of Arts before pursuing the advanced studies necessary for the degree of Doctor of Philosophy; and under such circumstances they appear in the statistics as having received their collegiate degree from Yale. On the whole, Yale is not greatly inclined to encourage migration, except when there is some specific object to be attained thereby. We believe that more men, in changing from place to place, are tempted to intellectual dissipation than stimulated to wider range of really hard work during the years of their candidacy. In other words, we believe that the time for the *Wanderjahre* is subsequent to that of the *Lehrjahre*, instead of being coincident with it.

WHAT IS RESEARCH IN A UNIVERSITY SENSE, AND HOW MAY IT BEST BE PROMOTED?

PAPER READ BY MR. G. STANLEY HALL, OF CLARK UNIVERSITY

This topic is of very great importance. Its decision very largely determines the nature and quality of true university work. It is a theme to which the Carnegie fund will give great prominence, and perhaps it might be called central for the higher education which seeks to carry on offensive and defensive warfare in new fields, instead of holding old forts and curricularizing second-hand knowledge. To have fully realized all that is involved in this question gives a new educational consciousness, and for a young man to have really grappled with the problem and wrought out ever so tiny a result is an experience of epoch-making importance. In the student it tends to a new type of mind that is more independent and resourceful, and perhaps we might add American. Without it, education is incomplete, and with it the young man feels that he can stand erect; is an authority and not an echo on some subject, minute though it be; and therefore ought to be more docile and respectful of experts in other fields.

No individual is large enough to treat this subject adequately, and can at best only suggest. In view of his experience in his own department, even were he able to formulate what is best in one, his norms would have to be modified for other departments.

All university men will doubtless agree that there is great abuse of the words "research" and "investigation" now, which are dragged down the academic grades even into the high school, where comparing a few references and doing over again work that has been done a thousand times—the teacher holding the key, a method which is wasteful and unnecessarily retards the pupil's advancement—are called research.

A candidate for the Doctor's degree must get certain results in a certain time, and, therefore, can only very rarely attempt great heroic work with large risks and possibilities of indefinite delay. His voyages of discovery must be coasting voyages, and he cannot set out to discover new continents. On the other hand, the practice, still too prevalent in some places in Germany, of making the student a mere apprentice doing some trivial and highly specialized work to fit into the work of his professor, is liable to great abuses and loss to the student. It may be almost as bad, although in a very different way, as the public research in the school above referred to. An American student lately sued a professor in a German university because he claimed that the latter had taken his work as his own without acknowledgment, and the loss of intellectual property in this field still awaits development, although German traditions, in my judgment, are hard on the student.

It is there, too, that we find the opposite extreme. I know a professor who assigned a crude student a subject; planned and caused to be made expensive apparatus; sat by him an hour or more almost daily; found and even brought him references; reconstructed his tables; and in the end took them and wrote the article in German, the student's name only appearing, but with a footnote stating in what university laboratory it was done.

Half the problem is to select a good topic. This may be less important in most fields than it is in psychology, where interest as an expression of personality furnishes a motive power of very great value. Most men who desire to devote themselves to philosophic study come to university work with a high head pressure of curiosity and zest in certain directions. Their previous training has either sown or developed roots that can be grafted on to or utilized with great economy. Indeed, choice of topic sometimes is decisive for careers, and in a few rare cases I have had students who worked for months on subjects, good in themselves, whom I have advised to change for work along some very different line, and that with great gain. In my twenty years of experience I have learned to keep a book of problems, which is always at hand, where I set down such thoughts and references as occur. Some of my colleagues do the same, and we often confer about topics that seem and do not seem promising. Bibliographies are collected and often books bought, and occasionally apparatus and other data are collected in advance. We then have personal talks with each new man; find the direction of his tastes, reading, and plans; and then seek, as perhaps the most responsible of all our functions, to fit the man and the subject, not infrequently, however, approving a topic the man himself brings to us.

When this is done, the first thing expected of the student investigator is that he shall read and otherwise post himself on all that immediately bears upon his subject. He must know what has been done; neglect no important author; try to stand on the shoulders of others, and not do over again what they have done. He must

criticise, evaluate, relate, and perhaps first of all make a concise digest of all the important work that precedes, whether or not it be later printed. The specialization, while not too narrow, must be acute enough to permit more or less mastery of the resources concerning it. This itself is often an important service. Here, in my subject, the French theses are usually better than the German or American. This brings the young man to the frontier. When he has seen what has been done, he can form an idea of what remains to be done. It is a new experience for him to see the frontier of human knowledge anywhere, and is of itself an indispensable element in the higher education.

But mere scholarship is essentially selfish. Many minds that are noetic amass great acquisitions, perhaps to their saturation point, and regard themselves as educated because they know. Thus it is almost proverbial with many directors of research that graduates from certain colleges, where the training is of the best and, not without some exceptions, the valedictorian type of mind, here reach a limit which it is very hard to pass. The faculties have been in a pupillary state so long that they cannot get into independent action. They must have authorities, while those who know less are less impeded in the freedom of their mental action. It is very difficult to bring a merely learned man to doubt standard authorities or to proceed to demonstrate their errors, but the essential thing in a university thesis is that it must add some tiny contribution. It may be a very small brick to the great temple of human knowledge, but it must be an advance. It must penetrate a little into the vague horizon that separates the known from the unknown. This means an appeal to conative, active powers. I shall be very far from overestimating the value of these contributions, but they should not be underestimated. They aggregate into a great and precious body of new knowledge. Of course, it will occasionally happen that the young explorer's net comes in empty, and the results of his protocol figure up contradictory conclusions, but even in this case he has distinctly smoothed a way for the next worker.

Perhaps we might divide the stages of university investigation into three. First, the method must be either invented or adapted to the problem. There are conditions to be controlled ; principles of selection must be determined ; negative instances rejected ; very often machinery must be devised and made ; ways of constructing curves must be discussed ; graphic methods of record as well as presentation wrought out. Method, as was said of old, is like the roof overhead in tunneling a sand bank ; it keeps off the débris and permits the work to go on beneath. Just as the apparatus for research will probably not be found in the cabinet to illustrate stated courses of lectures, so the mechanism of treating the data will not be laid down in any logic, or perhaps not completely found in any of the standard methods dealing with and distributing statistics. The method must not be too precise and accurate.

Pedants of method often need to be reminded of Aristotle's remark that precision should not be more exact than the nature of the subject admits of. I have noticed that some investigators reach their acme of satisfaction when their formulæ are made, their machinery works well, and this mechanical and preparatory stage is complete; and it is true that this is often all-conditioning, but it is essentially preliminary.

Second, there must be data collected; experiments made and noted; facts gathered; protocol books filled; instances and experiments multiplied; and the basis of induction made broad and deep. This is no less essential to safeguard against theorizing on insufficient premises. In some lines of work this is relatively easy, so that many minds here fall into doldrums. They mount sections, multiply slides, and tabulate results for weeks and months in a mechanical way, deferring the careful scrutiny that should be incessant, and often thus waste effort by the instinct of the ant that gathers, neglecting to add the functions, not only of the spider, but of the bee that mixes its own secretions with what it gathers. The counters, weighers, measurers, and tabulators in my experience are especially common among novices in experimental and inductive work. They are over-superstitious about their new methods, feeling that they will grind out results of themselves. Often, as the spring begins and the necessity for having finished the thesis looms up, it requires drastic methods to overcome this stagnation and arouse to the next stage of work, which is most difficult and important. There seems to be a perpetual delusion here that disguises the difficulties and time ahead. Some, alas, are competent only here. The professor makes the methods and helps them over the initial difficulties. In the second stage of amassing they seem competent because the work is of a more routine nature, but they never can be brought to cross the real Rubicon of interpreting their results. True, such men perhaps should not be put to research, but the professor must make up his mind in every case that he may have to finish any student's work, and that possibly he has so little conception of what research means that he will never realize that he has done nothing but mechanically repeat tests in an imitative way.

The third and main stage is to think it all out; to apply a rigorous, philosophic method; to reason logically on the objective facts; to find their unity; to determine what is central and what is unimportant; to relate and determine the place and bearings of all; and find whether the accumulations are mere agglomerations, or have a meaning and a value for science. It is really this that tests the metal of men—their acuteness of thought, their originality, their power of imagination and the construction of hypotheses; the readiness to catch implications and suggestions of all related facts in their ken—this requires a well-organized brain, and, as it were, knits its different elements together into a higher unity. Most of us professors fail here. How often we have the experience of finding that someone else has extracted

great truths from facts perfectly familiar to us, because he had the seeing eye and the divining mind ! It was said of Helmholtz that almost his every serious thought in his maturity added to the world's sum of knowledge. This is perhaps the highest compliment that could be paid a man of science ; and from this standpoint how incompetent most of us are to conduct research as it should be, and how new the standards of measuring men should be, and how different the faculties here required from those which successfully lead or drive platoons of collegians through textbooks !

My theme is treated, I know, in a way wretchedly inadequate, but a few rather incidental remarks I must add. Young men are not overburdened with gratitude. They have been aided all their lives, and often, when a professor has done most of the work, the student alludes to him in his thesis only with formal and perhaps scant recognition. This condition, I believe, is a fact of nature which we must accept. Our place is to serve, and, if there is the least jealousy or envy of our students—nay, more, if there is any reluctance to give them all our best ideas without any reserve or without the credit which should go with them—that we must do, not only with entire, but with rejoicing self-abnegation. Wherever there is doubt as to the authorship of ideas, the student should have every benefit of it, provided only that it is always stated where and with whom his work was done. I have in mind several cases of young men who have written books a year or more after they have left their professor, most of the best ideas of which have stood for years in his lecture notes ; but the least symptom, objective or even subjective, of reclamation here I believe ungenerous and opposed to the interests of the young, which we all must serve, and to the best interests of university work.

Having published a successful piece of research, a young man is almost a new creature. He is a citizen of a higher academic community, and has to set himself a higher standard to live up to. He must consider himself and be considered an expert, however narrow the field, and entitled to an opinion which, whether in the learned society, the conference of manufacturers about processes, committee rooms of legislators, in the councils of physicians, is entitled to a hearing. He is thus a member of the university invisible, not made with hands, and not a guest or servant or an alien in it. He has a better idea of what intellectual freedom means, and he has had some experience with real conviction, which the masses know not of.

Thus he must print and at once. This is not only a test of the institution, that it may be known to others what the degree really means, but the baptism of printer's ink gives enhanced self-respect. He has nailed up his theses and must defend them. These theses must also be freely exchanged and circulated, so that they can be available to all who wish them. They must be concise and not suffer from inflation or over-dilution. Most young men need discipline in learning to talk with the rifle rather

than with the shotgun or water hose. If there are any historical or other topics that require length, there should be means to that end. It is pathetic to hear representatives of wealthy institutions, which charge large fees and claim to do university work, pleading poverty when it comes to printing theses, and either refusing investigators in other institutions, who wish to see manuscript copies deposited in their libraries, or making them wait for each other to do so.

Research from its very nature cannot be very much organized or mechanized. All committees and rules and uniformity are here impertinent, if not injurious and impossible. The freedom of investigation blows where it listeth. It often needs financial resources, but should never be controlled from without. Indeed, I am not clear that it is entirely compatible with administrative perfection, and I fear that the over-organization, from which so many things suffer in this country, is bad for it. When a professor becomes the director of a great building, must keep it in order and look after accounts, and direct various attendants, he is certain to be weakened as an investigator. Victor Meyer would have all chemical laboratories built so cheaply that they could be renewed every ten years, that they might be plastic to the exigencies of research to their very boards, brick, and mortar. Great librarians have been eminent in history or literature, but it is in spite of, rather than because of, their vast knowledge and responsibility for books.

Finally, among the most important of all instrumentalities in research in at least one department, I believe to be the frequent, perhaps weekly, pooling of results by a choice body of men for each other's benefit. Let one or two men in a company of perhaps twenty read once a week what they have done, that each may know what all the others are engaged upon, and have the full advantage of following all their work and processes, and it will be found that the discussions and criticism which follow will be of great fruitfulness for each investigator as well as for others. Sometimes new references, names, or other sources of information are brought to light, but more frequently the subject is seasoned and pruned by criticism, and very often fructified by new ideas in this process. The teacher who has successfully tried this plan for a term of years can truthfully say that, while he has learned much from his masters, he has learned more from his own students. Here, too, by the ear-and-mouth method and by conversation that sharpens the minds of friends, he may perhaps have found one of his greatest pleasures in life, and been stimulated to render his own greatest end.

THE FOURTH SESSION

THE DEGREE OF MASTER OF ARTS

1. *Should the granting of this degree be encouraged or discouraged?*
2. *Upon what conditions should it be given, and what standard of accomplishment should it mark?*

PAPER READ BY MR. H. S. WHITE, OF CORNELL UNIVERSITY

The subject of this paper, which Cornell University has been requested to prepare, is, as already announced, "The Degree of Master of Arts." My understanding of the purpose of the paper is that we are not expected to attempt any exhaustive examination of the subject, but that merely a starting-point is to be afforded for the discussion of the two branches of the topic which has been submitted.

The first branch of the subject raises the question "whether the granting of the degree is to be encouraged or discouraged." The answer to this query must depend somewhat upon the reply to the second inquiry, namely, "on what conditions the degree should be given, and what standard of accomplishment it should mark."

Quite by itself must be treated the bestowal of the degree *honoris causa*, a practice which is of long standing at the older institutions. The traditional custom was to allow the degree of Doctor of Philosophy to include within it the degree of Master of Arts, as if the greater, as a matter of course, should embrace the lesser distinction.

Historically, the Master's degree, which dates from the fifteenth century, was, like the Doctor's degree, the badge of the instructor. According to Henry Malden, in his work *On the Origin of Universities and Academical Degrees* (London, 1835, pp. 110, 111):

When the teachers of different schools made regulations among themselves, which were subsequently confirmed by public authority, to prevent unqualified persons from assuming their office; or when similar regulations were enforced by the ecclesiastical dignitaries who had the charge of such schools; the terms master, doctor, and professor became titles, signifying a certain rank, and conveying certain powers in the scholastic body; but still they were given only to persons who were admitted by competent authority to the office of teachers. The appellations master and doctor were at first used synonymously; and it was only in the process of time that the name master came to be restricted more peculiarly to the teachers of the liberal arts, and the title of doctor to be assumed as a distinction by the teachers of theology and law, and subsequently of medicine. . . . Master was a general title: doctor, a special: all doctors were accounted masters, though all masters were not doctors.

Thus far Malden.

In the *Epistolae Obscurorum Virorum* (I:1) may be found the somewhat quizzical observation that:

Magister was used instead of Doctor of Theology, as the bearer, in the Catholic Church, stood in the place of Christ, the Master of all. So such are themselves called our masters, because they have to instruct us in the way of truth.

In the opening soliloquy of Goethe's drama, Faust, who in Marlowe's play is styled "Master Doctor," says of himself: "Heisse Magister, heisse Doctor gar!" The first version of the line ran: "Heisse Doctor und Professor gar!" but the climax in the revision was more suggestive of the academic crescendo.

At German universities, at the present time, the usage regarding the Master's degree appears to be somewhat varied. At some institutions the Master's degree may be obtained without securing the Doctor's degree. At other institutions both degrees are conferred, but the Master's is not conferred separately. That is to say, the degree of Doctor of Philosophy carries with it that of Master of Arts, and the same practice, as we have seen, has sometimes been followed in America.

Apart from this gratuitous award of the Master's degree as a sort of ornamental fringe to the degree of Doctor of Philosophy, a curious custom, now in disuse, also prevailed at Harvard College, and probably at other institutions, during the eighteenth century and the first two decades of the nineteenth. As indicated in the Harvard *Quinquennial Catalogue*, graduates of other colleges, particularly Bachelors and Masters of Arts, were admitted, on application, to the same degree (*ad eundem gradum*) in Harvard College. These applicants—the number of whom, to be sure, was not very alarming—were commonly graduates of neighboring New England colleges, such as Bowdoin, Dartmouth, Brown, Yale, Middlebury, and occasionally colleges more remote, as Columbia, Union, Pennsylvania, and William and Mary. Even graduates of Glasgow, Aberdeen, and Oxford were admitted to this friendly fellowship.

In view of the recent disinclination of some of the Harvard authorities to grant the right of university suffrage to graduates of other institutions and to others who are flocking in such numbers to Cambridge, who have actually secured a professional degree at Harvard, a right of suffrage which the one-year degree of Master of Arts nevertheless carries with itself, an interesting comparison might be drawn between the tendency toward academic hospitality a century ago and now.

The reasons for conferring the Master's degree *honoris causa* seem to have been based partly upon the feeling that all representatives of the great guild of scholars, as members of one coherent and congenial society, in whatever educational center they might appear, should have the same rights and privileges as are enjoyed by members, for instance, of the numerous Greek-letter fraternities of the present day.

The natural tendency of such a feeling was the inclusion in this guild of scholars of all those persons who properly belonged there, but had not satisfied the technical requirements for admission. Thus, members of the teaching staff at various institutions are made members of the family by this rite of adoption. A still further extension, if not abuse, of the bestowal of the degree *honoris causa* was its utilization as an intermediate distinction, as a sort of half-way house, to the various honorary Doctor's degrees, in cases where the merits of the recipient did not seem to be sufficiently conspicuous or eminent to justify the higher distinction. Illustrations of this practice are so well known to this audience that no further comment is needful. While it is unfair, or perhaps discourteous, at least, to criticise this somewhat liberal exploitation of university labels, the query naturally arises whether a practice which is liable to abuse, and which *has* been abused at a number of institutions, ought to be retained by institutions more scrupulous, whose initiative might appear to constitute a certain justification for a procedure elsewhere more irregular.

Another stage of the bestowal of the Master's degree was its award to the graduates of any institution who, having taken the Bachelor's degree, had presumably continued to pursue those intellectual paths for which their previous collegiate training had indubitably equipped them adequately, and who therefore, after the lapse of a partial lustrum, for the delimitation of which a term of three years appears to be a suitable *terminus a quo*, had acquired a sufficiently mellow intellectual maturity. To justify and secure this award, however, the mere possession and transmission of a five-dollar bill was cogent and conclusive.

A later stage in the evolution of this educational recompense was to require some proof of the pursuit of the aforesaid intellectual paths, in the way of the presentation of a literary performance which, in certain cases, was extended into a thesis; and examinations more or less formal upon the course of non-resident reading or study were also required. This period of non-resident study may cover from one to three years. A variation upon this method, in some institutions, is the requirement that at least one-half of a year be spent in residence at the institution in question, while the remaining moiety may be utilized in home study.

There is undoubtedly in many institutions at present a growing tendency to relax in this way the full requirement of residence for the Master's and the Doctor's degrees. In the case of the Doctor's degree, where the institution requires, before such degree is awarded, a full year of resident study in addition to a suitable period of study at other institutions of recognized standing, the standard for this degree does not seem to be in danger of deterioration. That graduate work at other institutions may be accepted in lieu of a portion of the full period of resident study seems proper and desirable, in order to encourage the migratory habit, which has produced such good results in the German university system. The danger of this relaxation

for the Master's degree, which is probably in part the outcome of the university-extension movement, consists in the acceptance of home study instead of a part of the residence requirement, a procedure which apparently has already been initiated by at least two institutions of high rank. Another institution accepts as constructive residence attendance on university courses of persons who reside two hundred miles away. Even if this liberality should not be criticised as perhaps too great an extension of the university atmosphere, it may be queried here, as in the case of the honorary Master of Arts, whether other institutions less scrupulous in their regulations might not find therein a justification of their own irregular procedure. (Compare *Report of the President of Cornell University, 1880-1900*, p. 76.)

The extreme practice in this respect is probably reached by an institution, not a member of this Association, which advertises that Bachelor's, Master's, and Doctor's degrees may be obtained from said institution without residence, through home study, after due examination. An illustration of the results of this system may be afforded by the case of an applicant for admission to the graduate department at Cornell University who had received the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy without apparently having seen the inside of any college walls. The applicant was informed that he was evidently a candidate for purely undergraduate honors.

The final stage in the treatment of the Master's degree is represented by those institutions which require at least a year of residence, with a prescribed course of study, upon which examinations are to be taken, and in some cases a dissertation or thesis is to be prepared.

The following résumé summarizes the requirements at those institutions which are members of this Association. (The reading of the résumé was omitted when the paper was presented.)

(FORM OF CIRCULAR INQUIRY)

DEAN OF THE UNIVERSITY FACULTY,
CORNELL UNIVERSITY.

ITHACA, N. Y., February 6, 1902.

DEAR SIR: Kindly inform me at your earliest convenience whether the inclosed statement regarding your requirements for the degree of Master of Arts is substantially accurate and adequate. The information is desired for a paper to be presented at the approaching meeting of the Association of American Universities.

Thanking you for the kindness, I remain,

Indebtedly yours,
H. S. WHITE,
Dean of the University Faculty.

UNIVERSITY OF CALIFORNIA

The degrees of Master of Arts, Master of Literature, and Master of Science are based on the corresponding Bachelor's degree, or a course of study equivalent to that represented by such a degree. One subject only, or one principal and one subordinate subject. Subjects in philosophy, history, philology, and (for Master of Science) the natural sciences may be chosen.

Minimum of one year, "which must ordinarily be passed in residence, and in no case will a degree be given to a student who has not been a resident graduate at this university for at least a year." A dissertation is also required.

Residence and study for the Master's degree may be counted toward the Doctor's degree in certain cases (apparently if of a sufficiently advanced character). An examination for the Master's degree is required.—*Register for 1900-1901*, pp. 257-9.

UNIVERSITY OF CALIFORNIA

OFFICE OF THE
RECODER OF THE FACULTIES.

BERKELEY, February 13, 1902.

MY DEAR SIR : Your statement concerning requirements for Master's degrees in the University of California is correct so far as it goes. The range of subjects is somewhat wider than would be supposed from the ordinary interpretation of the scope of the subjects mentioned in your first paragraph. These subjects are to be taken in their very widest sense.

There is no examination for the Master's degree apart from such examinations as may be required in the courses chosen by the candidate or—in the case of work not regularly organized into courses—such examinations as the instructors in charge may require. There is no formal public examination as there is for the Doctor of Philosophy degree.

The candidate for the Master's degree is ordinarily required to do eighteen units of work. This means nine lectures or other academic periods per week through one academic year. Two-thirds of these are expected to be devoted to the major subject. The work chosen for the major subject must be of the grade described as "primarily for graduates;" the work in the minor may be either of this grade or "for graduates and advanced undergraduates."

Yours very truly,

JAMES SUTTON,

Recorder of the Faculties.

CATHOLIC UNIVERSITY OF AMERICA

The Master's degree (Master of Philosophy) is based on the equivalent of the Baccalaureate degree in some * college of good standing. "Required to spend at least two years in resident study, subsequent to taking the Baccalaureate degree." A major and one minor subject and a dissertation are required. The candidate must also pass an examination, written and oral, in both subjects, if the dissertation is accepted.

Work done for the Master's degree may be allowed to count for the Doctor's degree.—*Year Book for 1900-1901*, pp. 60, 61.

* As amended. See following letter.

CATHOLIC UNIVERSITY OF AMERICA

FACULTY OF PHILOSOPHY,
OFFICE OF THE DEAN.

WASHINGTON, D. C., February 7, 1902.

DEAR SIR: The degree of Master of Arts is not given in this university. The paragraph which you quote from the *Year Book* is accurate, except that in your quotation the word "in this" occurs. This university, in the school of philosophy, gives no Baccalaureate degrees.

The Master of Arts degree is looked on as a "culture" degree; the Master of Philosophy degree implies philosophical method and scientific research; therefore, work for this degree is counted for the Doctor's degree. I am always at your service. I am

Yours sincerely,

MAURICE FRANCIS EGAN,
Dean of Philosophy Faculty.

THE UNIVERSITY OF CHICAGO

(1) Bachelor of Arts, Bachelor of Philosophy, or Bachelor of Science degree or its equivalent a prerequisite at Chicago. At least three quarters' residence required, and also a dissertation. Seven majors of graduate work, all in one department. A satisfactory public examination. Or (2) at least three quarters' residence and nine majors of graduate work equally distributed among three departments. A satisfactory public examination, but no dissertation required.

Each department decides what courses would be accepted as graduate courses for the Master's degree, and this specification is duly announced in the *University Register*. A student with any Bachelor's degree may become a candidate for any Master's degree, provided he has fulfilled the requirements of the University of Chicago for the corresponding Bachelor's degree. Substitutes for the specific requirements of the university for the Bachelor's degree are allowed candidates for the Master's degree to a limited extent.

Students in the Divinity School are apparently allowed to take some professional courses for the degree of Master of Arts.—*Register for 1900-1901*, pp. 12, 70, 88, 174, 193, 201, 212, 214, 249, 259, 267, 274, 314, 317, 327, 409, etc.

THE UNIVERSITY OF CHICAGO

CHICAGO, February 10, 1902.

DEAR PROFESSOR WHITE: Your favor of the 6th inst. is duly received. I herewith return your draft with a few emendations (incorporated above). Very truly yours,
H. P. JUDSON.

CLARK UNIVERSITY

Apparently the degree of Master of Arts is not conferred at this university.

COLUMBIA UNIVERSITY

Baccalaureate degree (in arts, letters, philosophy, or science, or an engineering degree) a prerequisite, or "the equivalent of one of these from a foreign institution of learning."

Minimum period, one year. Time spent for the Master's degree may be counted on the Doctor's degree. One major and two minor subjects required. Subjects may be in humanities or in science. Essay required, which may be a paper read before a seminary. An examination for the Master's degree is required. Master of Arts and Master of Laws are apparently the only Master's degrees conferred.—*Catalogue for 1900-1901*, pp. 207-10.

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK, February 7, 1902.

DEAR SIR: President Butler asked me to say that the inclosed statement as to the work for the Master's degree at Columbia is substantially accurate and adequate. If possible, however, we should be glad if you could insert a statement that in most departments attendance for one year by the candidate upon the seminary in his major subject is a prerequisite for recommendation for the degree of Master of Arts.

Respectfully,
F. P. KEPPEL,
Secretary.

CORNELL UNIVERSITY

Master of Arts (conferred also in place of the degrees of Master of Philosophy, Master of Letters, and Master of Science formerly conferred, but not given if the major subject be in the College of Agriculture, Architecture, Civil Engineering, or in Sibley College. In such a case another Master's degree is indicated). Based upon Baaccalaureate degree equivalent to the Bachelor's degree at Cornell. A major and one minor subject required, in letters or in science. Minimum period of residence, one year, without exception. A thesis and an examination are required. The time spent in study for the Master's degree, whether the degree be taken or not, may be counted toward the time required for the Doctor's degree, provided the special committee in charge of the work approve, certifying the work done as suitable to such Doctor's degree.—*Register for 1901-1902*, pp. 69-72.

HARVARD UNIVERSITY

(AS AMENDED)

The degree of Master of Arts is based upon the Harvard degree of Bachelor of Arts, or its equivalent. It is conferred for the satisfactory completion, with high credit, of a certain number of advanced courses of instruction, or for special research or study. These studies may be in science as well as in literature, history, philosophy, etc., and in the case of each candidate must be closely related in subject, though not necessarily all in one department of instruction. The programs of courses offered by candidates must be approved by the administrative board of the Graduate School. At least a full year of study in residence

is required. A special Master's thesis or dissertation is not required. Residence and study for the Master's degree may, with the approval of the appropriate committee, be counted in partial fulfilment of the requirements for the Doctor's degree.

Certain studies pursued in a professional school of the university, if not offered at any time for a professional degree, may, if approved by the administrative board of the Graduate School, be offered for the Master's degree.

No special examination for the Master's degree is required, but in each of the several courses of instruction offered for the Master's degree public examination is prescribed by the statutes. The Master's degree is also conferred *honoris causa*.

HARVARD UNIVERSITY

CAMBRIDGE, MASS., February 10, 1902.

MY DEAR PROFESSOR WHITE: Absence from town has slightly delayed me in answering yours of February 4. I beg to inclose a revised and very much condensed statement of the requirements here for the degree of Master of Arts (given above). In your form of statement the fact that the courses must be done with high credit and that they must really belong to one subject was perhaps not clearly brought out.

We have here, you know, the degree of Master of Science also. The requirements for the degree are in several particulars the same as those for the degree of Master of Arts. The Harvard Bachelor of Science, or its equivalent, is prescribed. The studies offered for the degree must fall within one of these departments : mathematics, engineering, physics, chemistry, biology, geology, and American archæology and ethnology. The candidate's choice must receive the approval of the division in which he studies.

Hoping that this will be of service to you, I beg to remain,

Very sincerely yours,

JOHN H. WRIGHT.

JOHNS HOPKINS UNIVERSITY

Apparently the Master's degree is not conferred at this university.

LELAND STANFORD JUNIOR UNIVERSITY

"The degree of Master of Arts is conferred upon graduates of this university, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the Baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. . . . Work done in the university outside of the requirements for the degree must be registered, but will not be taken into account in connection with the degree." —*Register for 1900-1901*, pp. 57, etc.

Statement correct.

FEBRUARY 13, 1902.

O. L. ELLIOTT,
Leland Stanford Junior University Registrar.

UNIVERSITY OF MICHIGAN

(AS AMENDED)

The degree of Master of Arts is based on the Baccalaureate degree for a general course. Subjects may be in science or in letters. A thesis may or may not be required, at the option of the special committee. A residence of at least one year at the university is commonly (as a rule) required; but (occasionally) graduates of the university who have already completed a portion of the term of residence prescribed for the Master's degree are (for exceptional reasons) allowed to continue study for the degree without further residence. A student in any of the professional schools may at the same time pursue studies for the Master's degree, with a minimum term of study and residence of two years. (This statement is, in form, true; the privilege has not been withdrawn; but, in fact, it is very seldom that a professional student finds time to study for a Master's degree.) An examination is required for the Master's degree. The degree of Master of Science is also conferred.—*Calendar for 1900-1901*, pp. 136, 211, with notes in parentheses by the secretary of the Council.

UNIVERSITY OF MICHIGAN

ANN ARBOR, February 10, 1902.

DEAR SIR: With this I return your summarized statement of the Michigan requirements for the Master's degree, with a couple of comments, to which, though not very important, I would like to direct attention.

1. Our policy is to discourage non-resident work for the degree. A few years ago we granted the privilege with considerable freedom, but found the outcome, on the whole, unsatisfactory. But cases occasionally arise where it seems proper to make an exception to the rule.

2. A student in a professional school may, under our printed regulations, be given the privilege of working at the same time for a Master's degree; but, except under unusual conditions, he would not be encouraged to make the attempt.

Very respectfully yours,

WM. H. PETEE,

Secretary of the Administration Council of the Graduate School.

UNIVERSITY OF PENNSYLVANIA

The degree of Master of Arts is based on the Baccalaureate degree. The candidate must complete twelve standard courses or their equivalent. A minimum residence of one year is required. No thesis is specified. A written examination is required for the Master's degree. The catalogue apparently does not specify whether the degree of Master of Arts is conferred for studies in either letters or science.

The degree of Master of Science is also conferred.—*Catalogue for 1900-1901*, pp. 193, etc.

UNIVERSITY OF PENNSYLVANIA

DEPARTMENT OF PHILOSOPHY.

PHILADELPHIA, February 8, 1902.

DEAR SIR: I have just received your abstract of our requirements for the Master's degree. It is accurate in every respect.

With regard to the last two points: We have granted the degree of Master of Arts for work done either in letters or in science. Of late years this faculty has endeavored to avoid granting the degree of Master of Science for reasons which are purely local. For many years our college faculty has granted the degree of Master of Science to students who have completed a fifth year of technological work in various branches of civil and mechanical engineering and chemistry. The degree of Master of Science has consequently become associated with technological work, and thus for work in pure science the degree of Master of Arts has frequently been given where it was our former custom to give the degree of Master of Science.

Very sincerely yours,

Wm. ROMAINE NEWBOLD, *Dean.*

PRINCETON UNIVERSITY

The degree of Master of Arts is based on the degree of Bachelor of Arts. It is conferred (1) after one year of graduate study in the university prescribed under the care of the faculty, with an examination on the studies pursued; (2) or after two years, on the completion of a certain number of graduate courses; (3) the degree is likewise conferred upon a Bachelor of Arts of the university, who shall have submitted a satisfactory dissertation not earlier than the third year after graduation. The degree of Master of Science is also conferred in the same way. The Master's degree is also occasionally conferred *honoris causa*.

The catalogue apparently does not state whether the degree of Master of Arts is conferred for studies in science as well as in letters. It is so conferred.—*Catalogue for 1900-1901*, pp. 40, 41.

Revised by Professor Andrew F. West, dean of the Graduate School, February 8, 1902.

UNIVERSITY OF WISCONSIN

The degree of Master of Arts is based on the degree of Bachelor of Arts. Candidates pursue "an approved course of study equivalent to the work of one year of graduate study in the university, and present a satisfactory thesis upon the leading subject pursued. Students who desire to do part of their work for the Master's degree *in absentia* may accomplish by this method not more than half of the work required for the degree. At least one semester must be spent in residence at the university." An examination for the Master's degree is required. Other Master's degrees are also conferred.—*Catalogue for 1900-1901*, pp. 53, 59, etc.

UNIVERSITY OF WISCONSIN

MADISON, February 11, 1902.

DEAR SIR: The inclosed extract from our catalogue correctly represents the conditions on which the Master's degree is granted at this university. Perhaps it is only fair to say that practically no students carry on work for the Master's degree *in absentia*. Very few degrees have been granted in this manner—wholly, I think, to instructors or professors in other universities who have carried on their residence work in our summer session.

Very truly yours,

E. A. BIRGE,

Acting President.

YALE UNIVERSITY

(AS AMENDED)

The degree of Master of Arts is based on the Bachelor of Arts course, or an equivalent course elsewhere, and is conferred on holders of such degrees of one year's standing or upward. One year's systematic study, not professional, in New Haven is required, followed by an examination. The degree is also conferred on those graduates of Yale College who without residence have given to the college faculty evidence of having made satisfactory progress in liberal studies after receiving their first degree, at any time not less than three years after graduation, having spent a year in liberal and non-professional study, such course of study having been designated by the faculty. An examination is to be taken on such a course, or the candidate may submit, as evidence of his fitness for this degree, a printed essay. The degree is also apparently conferred *honoris causa*.—*Catalogue for 1899-1900*, pp. 198, etc.

YALE UNIVERSITY

NEW HAVEN, Conn., February 7, 1902.

MY DEAR SIR: In reply to your letter of the 6th inst., I would say that in our triennial catalogue two lists are given of persons who have received the degree of Master of Arts; one list is entitled "Master of Arts upon Examination;" the other is included in the list of honorary graduates. I have amended your statement of the case to conform to our present practice. Only Bachelors of Arts of Yale College are allowed to do their work in absence.

Yours very truly,

ANDREW W. PHILLIPS.

An examination of these terms on which the degree of Master of Arts is conferred at different institutions reveals a wide variance in the conditions prescribed. The variation in usage is specially noteworthy in respect of two points: first, the nature of the antecedent degree, and, second, the range of studies permitted.

The antecedent degree is sometimes stated to be "the degree of Bachelor of

Arts at the institution in question, or an equivalent course elsewhere ;" "the corresponding Bachelor's degree" or "an equivalent course of study successfully pursued ;" "the Baccalaureate degree in the institution in question or in some other college of good standing ;" "the Baccalaureate degree in the institution in question or its equivalent ;" "the Baccalaureate degree or the equivalent from a foreign institution of learning ;" "the first degree at the institution in question or an equivalent training elsewhere ;" or "the Baccalaureate degree for the general course."

Practically, then, the antecedent degree may represent any Baccalaureate degree, whether literary, scientific, or technical, although in few cases is a technical degree accepted as satisfying the first requirement ; and in some cases merely the equivalent of a first degree is accepted in lieu of the formal badge.

The same variety occurs in the nature of the studies permitted, but here again the subjects are chiefly in languages, history, philosophy, or mathematics, although in many institutions subjects of a scientific nature are also admitted. It is not the intention of the writer to raise the issue of what should be a suitable requirement for the Bachelor of Arts degree, but it is necessary to point out that in some institutions it has seemed best not to differentiate the first degree, but to adopt only one Baccalaureate label, and *that* the Bachelor of Arts, as a sort of blanket title for what is called a general undergraduate course. Continuing this tendency, some institutions have thought best to adopt a similar policy with reference to the degree of Master of Arts, permitting it to be used for work for which elsewhere the degrees of Master of Philosophy, Master of Science, etc., have seemed the appropriate degrees. This differentiation between Master of Arts and Master of Science, etc., has sometimes arisen, not entirely from the nature of the work pursued for the advanced degree, but from the character of the antecedent degree. Here again there is room for a considerable divergence of opinion regarding the nature of the work for which the Master of Arts degree should be given. There are those who feel that the degree should retain what might be called its traditional significance as representing a course of so-called literary or humanitarian study, while others consider it more convenient to discontinue the earlier differentiation between letters and science. The writer must confess to a somewhat languid interest in this controversy, which seems to him to involve chiefly a discussion of terminology. The essential point in any event is that the work be of a high grade.

Given the year of resident study which was earlier described, a new bifurcation in the aims of candidates for the Master's degree may be noted. One group of students desires chiefly to prolong the undergraduate studies for an additional year after graduation, and incidentally to secure some recognition of this prolongation. Another group desires to pursue special studies for the Master's degree as forming a possible or probable introduction to study for the Doctor's degree.

The history of the degree of Master of Arts at Harvard College affords some interesting illustrations for this general discussion, and also reflects the dual tendency just indicated. (Compare President Eliot's *Reports* for 1890-91, pp. 96-8; 1891-92, pp. 68, 69; 1894-95, p. 109; 1896-97, pp. 149, 150; 1897-98, p. 33; and 1899-1900, p. 150.)

In the year 1891 Professor J. M. Pierce, then dean of the Graduate Department, pointed out the ambiguous character of the work for the degree and the dubious tendencies developed.

At Harvard, as at a number of other universities, the degree of Master of Arts had been given to any Bachelor of Arts of three years' standing, upon the payment of a small fee, without any requirement for residence or for study. After the year 1872, a moderate requirement was made of a year's residence and study in approved courses, a requirement which, as Professor Pierce pleasantly remarks, was "a great advance on the previous discreditable condition of things, for which the only excuse was that it had existed for a time beyond the memory of any man then living." Later it was decided that only courses of an advanced grade should be accepted, and that the examinations must be passed with high credit. These are the present conditions—conditions which have given rise to certain difficulties. On the one hand, the degree of Master of Arts is regarded as merely the extension on a slightly higher plane of the work done for the Bachelor's degree, and the Master's degree might be awarded for substantially the same group of courses which could be utilized in securing the first degree. The tendency of these conditions would be to lower the quality of the Master's degree and to blend or confuse it with the Bachelor's degree, particularly as in a number of cases both degrees have been conferred at the same commencement on the same person. On the other hand, the degree of Master of Arts is normally a degree for graduate work which should have a certain approximation in quality to the work done for the Doctor's degree. The suggestion made by Professor Pierce as a solution of the problem was the moderate raising of the requirements of the degree of Master of Arts.

A second stage in the history of the degree was to award it to candidates securing the Bachelor's degree in divinity, law, or science, or the Doctor's degree in medicine, where the longest course of study and residence had been satisfactory and examinations had been passed with high credit. This utilization of the degree to increase the value of the professional degree came to be viewed as an improper practice, and it was finally resolved to discontinue the custom of conferring the degree of Master of Arts in connection with a professional degree. At the same time, too, the custom was discontinued of allowing the degree of Doctor of Philosophy to cover and carry with it the degree of Master of Arts, although this had been the traditional practice of universities.

The aims of candidates for the degree of Master of Arts are indicated by some statistics taken in 1898, showing that this degree is often used as a final degree for persons intending to adopt teaching as their profession, although a certain percentage of these might later continue their studies with the view of securing the degree of Doctor of Philosophy.

Another interesting table, published in 1899, shows that the average age of the normal Master of Arts is a little over twenty-four, while, on the other hand, fully 50 per cent. of the total number receiving the degree were of the age of twenty-seven or over. Persons of this age may certainly be regarded as sufficiently mature for pursuing advanced work.

After this brief résumé of the vicissitudes which the Master's degree has encountered, a few suggestions will be offered in answer to the two questions included in the subject. First, should the granting of the degree be encouraged or discouraged?

Besides the reasons already adduced for not granting the degree of Master of Arts *honoris causa*, another reason for discouraging its granting, although perhaps less urgent, would be of the same nature as one reason for discouraging the granting of the degree of Doctor of Philosophy *honoris causa*, namely, in order to differentiate clearly between purely honorary degrees and those obtained by examination upon scholarly work actually performed. Still another reason assigned for discouraging the granting of the Master's degree is in order that the attention of advanced students may be concentrated solely upon the Doctor's degree as the teaching degree *par éminence*. On the other hand, there appear two good reasons for encouraging the granting of the degree. In the first place, many students do not care to continue their studies to the extent and with the austerity required to secure the Doctor's degree, who, as we have seen, nevertheless desire to prolong their undergraduate studies, and also to secure some official recognition for that prolongation. Many such persons ultimately become teachers in the secondary schools; others are persons of literary and scientific tastes who are likely to form later a large and approving background in the community, and their influence may be helpfully felt in educational and other intellectual interests. Others, again, often intend that their studies for the Master's degree shall form an introduction for the probable continuance of those studies for the Doctor's degree, or develop this intention after having begun their studies for the Master's degree, which they had at first expected would be final. It does not seem that the Master's degree, thus forming a stepping-stone to the Doctor's degree (whether taken in transit or not), would be any obstacle to the vogue or prominence of the higher degree.

The affirmative answer to this first question is further based on the assumption that the general conditions for conferring the Master's degree represent some

adequate intellectual performance. The difficulty in establishing a uniform standard lies, as already indicated, partly in the varying aims of the applicants for the degree. Certainly the standard for the degree should be high. This standard should represent, for instance, something more than the mere prolongation of the undergraduate studies into the fifth year, although the reservation should be made that at the present time, with the wide extension of the elective system and the early specialization which is a consequence of that extension, the work done in the later undergraduate years is often of quite as advanced a character as the work done in the early years of graduate study. It is probable that the most convenient solution of this difficulty might be made without lowering the standard, but by differentiating it to suit varying conditions in the same institution or at different institutions. Such differentiation already appears. At some institutions the degree is based on a certain number of courses passed; at others, on work more or less independent, done under direction. The treatment of the requirements for a thesis is another illustration of this differentiation. At those institutions where a thesis is not required it seems to be considered that the period of a year's residence might be more profitably devoted to the untrammeled pursuit of one or more special topics, without that division of interest and pursuit which the production of an adequate thesis often implies. At other institutions the production of a solid dissertation or thesis appears to afford one of the most satisfactory tests of the attainment of the principal object of study, namely, the utilization of the results of one's investigations in accessible form. At more than one institution the option is offered of securing the degree with or without the presentation of a formal thesis. At some the minimum period of residence is allowed to be utilized in uninterrupted study, while the completion and presentation of a thesis are postponed to a later date without the requirement of additional residence.

Finally, the conclusion of this brief introduction to the subject is that, as a matter of general educational policy, the granting of the degree of Master of Arts *honoris causa* should be discouraged, but that the granting of the degree should be encouraged if based upon resident study and resultant examinations. Further, that under the present conditions, provided the standard for conferring the degree be sufficiently high, that standard need not be uniform.

Speaking from the standpoint that our universities are primarily teaching bodies rather than examining bodies, the writer is also of the opinion that the minimum requirement of a year's resident study, not necessarily in consecutive terms, should not be reduced by allowing home study, or study at other institutions, to make good any shortage. One year seems a period brief enough for putting the local brand on any graduate.

DISCUSSION ON "THE DEGREE OF MASTER OF ARTS"**MR. D'OOGE, OF THE UNIVERSITY OF MICHIGAN:**

In the University of Michigan there is a decided feeling in favor of retaining the Master's degree. This results in part from the fact that by graduating on what is called "the credit system" students often find that they can complete their work for the Bachelor's degree in the middle of the fourth or Senior year, and then by remaining another semester and pursuing graduate courses of study fulfil the requirements of resident study and complete the required work for the Master's degree *in absentia*. In practice, however, but few students thus complete their work, but the larger number prefer to return, and so practically get more than one year's study for this degree.

Then there is always a certain class of students whom we can encourage to study for this degree, but of whose fitness or ability to become Doctors of Philosophy we have some doubt.

Quite a number of our graduates, after teaching for a few years, return for another year's study in order to broaden their horizon or to specialize in the line of their work as teachers.

We hold that, while the candidate should pursue a line of study represented by one major and two minors, his work should not be too "intensive"—not so much so as in the case of the candidate for the Doctor of Philosophy degree—but more "extensive" and free. We are willing to give the degree of Master of Arts to any student who, having the Bachelor's degree, has pursued a suitable course of study for one year and passes a satisfactory examination on this course.

The Master's degree is sometimes made use of with us as a kind of half-way house to the Doctorate, but this practice we do not encourage. The idea that the Master's degree should be a requisite to securing a position in a good high school, particularly as a teacher of some specialty, is gaining ground among us.

MR. HADLEY, OF YALE UNIVERSITY:

The Mastership of Arts at Yale is primarily an academic degree, given to graduates of the college on the basis of subsequent work not connected with their profession. When given graduate students of other colleges, it is awarded on the basis of resident work of acquisition, rather than of research. The existence of a degree of this kind is of extreme value in making clear to some who otherwise would not see it the difference of character between the Mastership, which is essentially an advanced academic degree, and the Doctorate, which is in its essence a professional one. We believe that the maintenance of this distinction has real use.

MR. NEWBOLD, OF THE UNIVERSITY OF PENNSYLVANIA:

The Master's degree at the University of Pennsylvania represents in theory one year of non-specialized resident work. This theory is carried out in practice thus far only: A candidate for the Master's degree can elect any graduate work that he desires, subject to the consent of the dean. During the past six years the dean has advised, and sometimes even

persuaded, the student to elect work in several different branches. But if the student is firmly resolved to specialize and desires to take the Master's degree, the dean has hitherto always allowed him to do so.

Quite frequently students who have been working with the Doctor of Philosophy degree in view find themselves for one reason or another prevented from continuing the work, and apply for a Master's degree in order to have something definite to show for their work. They are then allowed to take it. We discourage students who are working for the Doctor's degree from taking the Master's degree incidentally, although, if the student sets his heart upon it, we allow him to do it. We frequently allow students to take the Master's degree who would not be permitted to proceed to the degree of Doctor of Philosophy. I do not believe that this custom tends to attach a stigma to the Master's degree. So far, no student who has taken the Master's degree has himself known that he would not be allowed to proceed to the Doctor's degree, and in no case has the Master's degree been used as a bribe to dissuade him from going farther.

MR. BRIGGS, OF HARVARD UNIVERSITY:

The Master's degree at Harvard is awarded to a student who has the Harvard Bachelor of Arts degree, or its equivalent, and who has passed, with high grades, four courses not of an elementary character which form a group of kindred studies and which are accepted by the administrative board of the Graduate School as suitable work for the degree of Bachelor of Arts. The courses need not be in one department; but, if not in one, they must be in allied departments—as, for example, history and government; or history, government, and economics. No thesis is required, except such theses as may be—and often are—required in the regular work of the courses. Students who finish their work for the degree of Bachelor of Arts in three years do not always take the degree at the end of the third year. They sometimes, though still registered as Seniors, devote their Senior year to work which they mean to use for the degree of Master of Arts; sometimes students who have done in three years all but a very small part of their work for the Bachelor of Arts degree add to that part in their fourth year the work for the Master of Arts degree. Such students take the Bachelor of Arts degree at the end of the fourth year and the Master of Arts degree at the end of the fifth, though with no further residence or work in the fifth year. We cannot rightly give the two degrees in the same year; and the present arrangement, though not satisfactory to anybody and regarded by everybody as transitional to something better, seems the only possible arrangement in our present attitude toward the three-year degree. For the three-year degree we require a higher standard of work than for the four-year degree, so that quality shall not be sacrificed to quantity; but we require no higher standard for a man who does all his work in three years and does not get his degree till the end of the fourth year (I am not going into the question of logic in this matter). Moreover, a good many students who might take the degree in three years prefer taking it at the end of the fourth year, because they wish forever to be associated with the class with which they entered the university.

Our candidates for the Master's degree may be students who mean afterward to take the Doctor's degree, or students who wish to be teachers in secondary schools and feel that the Master's degree is of real value to them financially as well as intellectually, or persons

who do not mean to be teachers and do not mean to take the Doctor's degree, but who have the time and the desire to spend one year more in educating and cultivating themselves by university study.

MR. SMITH, OF THE UNIVERSITY OF WISCONSIN:

The Master's degree is given at the University of Wisconsin, and the inclination of the faculty to encourage study for it seems stronger just now than for some years past. As the Bachelor's thesis is considered an important requirement for the first degree, and is really a heavy one, professors have hesitated to advise their candidates for the degree of Doctor of Philosophy to prepare a second thesis for a Master's degree, and a third for the Doctor's degree. So much thesis work would seriously interfere with the student's work in other directions. Last year, however, on the recommendation of the committee on graduate studies, the faculty voted to relieve from a second thesis, under certain conditions, those graduate students whose Bachelor's theses had been regarded as of special merit. The professor under whom the thesis has been prepared must recommend such action to the committee on graduate studies, and the major study for the Master's degree must lie in the same department as that for the Bachelor's degree. This applies to graduates of the University of Wisconsin; candidates for the Master's degree who come from other institutions must prepare a thesis. This year shows a fair increase in the number of candidates for the Master's degree (twenty-nine in all). Of these, five have been excused from a Master's thesis; the remainder—of whom seventeen are graduates of the University of Wisconsin, seven from other colleges—will offer theses.

Since many of our students cannot pursue their studies uninterruptedly to the Doctor of Philosophy degree, it seems advisable and just that at the end of a year or more of faithful study in approved courses the Master's degree should be granted. The student would thus have something to show for his study, and would doubtless find the Master's degree of value in securing work, as well as otherwise.

Opinions differ in the faculty, both as to the proper place of the Master's degree and the requirements that should be exacted for it. But in practice the matter seems to be working itself out, viz.: the Master's degree is not to be a kind of inferior Doctor of Philosophy; it is coming to be regarded as the first milestone toward Doctor of Philosophy, the work being of the same general character as that for Doctor of Philosophy—necessarily somewhat broader and less specialized, as coming in the early period of graduate study—and all counting, in so far as it is graduate work, toward Doctor of Philosophy. It seems probable that a considerable proportion of the candidates for the Master's degree will eventually go on to a Doctor's degree.

MR. PERRY, OF COLUMBIA UNIVERSITY:

Columbia University holds fast to the degree of Master of Arts, which it regards as valuable in itself, rather than as simply a better Bachelor's, or cheaper Doctor's, degree. The number of candidates for it has become very great with us, and 107 such degrees were conferred at the commencement of 1901. The regulations call for a minimum of a full year's work at Columbia after attaining the Bachelor's degree, no distinction whatever being drawn between graduates of Columbia and those of other colleges, so long as the candidate shows

himself fitted to undertake graduate work. The courses allowed to count toward this degree are in general such as are offered to candidates for Doctor of Philosophy; if open to undergraduates also, they may generally not be counted toward either of the higher degrees without the performance of supplementary work assigned by the instructor in charge of each course. Examinations must be passed in all subjects, of which three are required, one major and two minor, as for the Doctor's degree; and the requirement of an essay on some topic closely connected with the major subject is rigidly enforced.

This degree seems to us particularly valuable as offering substantial testimony to the achievements of earnest students whose advanced work has been carried on for a year or more, of whom many have not time or inclination to spend in graduate study the three years generally necessary for the Doctor's degree. Many, on the other hand, are encouraged by their progress and success to become candidates for the higher degree. In the latter case the time spent for the Master's counts toward the Doctor's degree; but the requirements for the latter are in no respect less rigidly enforced because the candidate has taken his Master of Arts degree—merely the time, not the lower degree, counting toward the higher. It very often happens that more than a year is spent for the Master of Arts degree, especially when the requirement of resident study is first fulfilled, and some months spent thereafter in writing the essay. Our candidates are encouraged to do this, and it is becoming more and more common. Sometimes the required attendance in these subjects is spread over two or even three years, one subject being taken at a time.

Among the candidates for the Master's degree there is always a large number of persons engaged in actual teaching in or near New York, who frequently make great sacrifices of time and strength to secure the degree, and these are among the most serious and earnest students we have. By the new arrangement with Teachers College, now an integral part of the university, the combination of theoretical graduate work with advanced practical work may secure for the candidate his degree of Master of Arts and his professional "Master's diploma" at one and the same time.

MR. STRINGHAM, OF THE UNIVERSITY OF CALIFORNIA:

I am interested in the two types of prerequisite for the Master's degree described by Mr. Chamberlin as in vogue at the University of Chicago. Such a liberal policy in administering the conferring of this degree is just and reasonable. Traditionally it is the scholar's degree, given as a reward for broad, general scholarship. As such it is distinctive and well differentiated from the philosophical or scientific Doctorate. As a Doctor's degree in miniature it does not quite justify its existence. My colleagues at the University of California have voted: that the Master's degree should be retained; that it should represent such an amount of strictly graduate work as can be accomplished in from one to two years; that it should require the writing of a thesis showing the ability to make use of original sources of knowledge; and that students preparing to teach in secondary schools should be encouraged to take this degree.

MR. WEST, OF PRINCETON UNIVERSITY:

Mr. West advocated the double use of the Master's degree, both as a degree of general culture and incidentally as a degree which might be taken on the way toward the Doctor's degree.

MR. NEILL, OF THE CATHOLIC UNIVERSITY OF AMERICA :

In discussing the topics assigned for this morning's session, I should like to consider them in reverse order, and take up first the question as to what the Master's degree should stand for. As a matter of fact, it is coming to have two distinct significations. It sometimes represents a course of general study carried on for one or more years after the taking of the Baccalaureate degree, and embracing a rather wide field of study, without any attempt at such specialization as marks the work leading up to the Doctorate. It thus represents a course of liberal study, aiming at general culture; and, in effect, it means a prolongation of the time and effort devoted to the attainment of the kind of education marked by a liberal arts degree. But the tendency toward specialization has to some extent encroached upon the domain of undergraduate study, which was once held sacred to the aim of broadening and liberalizing; and to a greater extent the same tendency has invaded the field of the Master's degree; so that today this degree is frequently given to men who have entered upon specialized courses leading to the Doctor's degree, but who, from want of time or means or ability, do not reach the point where they are eligible to the Doctorate. In this latter sense, it represents what has been very well styled here a half-way station on the road toward the Doctor's degree. We have here two very different sorts of training, and it hardly seems that they ought to be stamped with the same trade-mark. Both sorts of training are to be encouraged; each appeals to a certain clientele; and an effort ought to be made by the university to meet the needs of each group. It is undoubtedly the highest function of a university to train specialists, after the manner of the German university, and to be the prime agency in pushing out in every direction the frontiers of the domain of knowledge. But we also have need, both in professional and in civic life, of men of broad culture and of symmetrical mental development, such as the English university aims to produce. It is desirable, then, to encourage men to enter upon lines of specialized study; and to encourage such as, for one reason or another, cannot go on to the Doctorate, it seems to me that there should be some lesser degree which would indicate work in the direction of the Doctorate. This degree might very well be a Master's degree; but would it not be well to call it Master of *Philosophy*? There is undoubtedly a sentiment against the unnecessary multiplication of degrees; but the tendency to escape from this by "blanket" degrees seems to me in the direction of confusion rather than of simplicity. It is suggested that a Master's degree of the sort here indicated would come to be regarded as a badge of inferiority, and would, therefore, fall into disrepute and be rebuffed by students. But the fact is that the Doctor of Philosophy degree with us has come to be pre-eminently a teacher's degree. The overwhelming majority of those who study for it are fitting themselves for teaching work. Other things being equal, the possession of a Doctor's degree will, at the beginning of his career, give its holder some advantage in the competition for positions. If, therefore, a student for any reason cannot go on to his Doctorate, it seems very probable that he will welcome a Master's degree, that would indicate a certain amount of training in the specialty he desires to teach. It would not place him at any greater disadvantage, as compared with the man holding his Doctor's degree, than he would suffer without any degree above the Baccalaureate; and it would give him some standing above other competitors who held only Baccalaureate degrees. The granting of this degree of Master of Philosophy might

thus operate to induce men who could not see their way clear to go on to the Doctorate to enter on the work for the Master's degree. The granting of this degree seems, therefore, in the interest of higher education. On the other hand, the course leading up to this Master's degree would not appeal to that other class of students who are not going into the field of teaching, but who wish to carry on their course of liberal study beyond the Baccalaureate degree. And certainly this sort of study is to be in every way encouraged. The degree of Master of Arts would very well mark attainments in this kind of study; and it is probable that the number of men going on for advanced culture courses would be increased by the offering of this degree. It seems possible, therefore, that by discouraging the granting of Master's degrees a university is unnecessarily limiting its field of usefulness.



*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The Fourth
Annual Conference*

APRIL 20, NEW YORK CITY
— 1933 —



*THE ASSOCIATION
OF
AMERICAN UNIVERSITIES*

1902-1903

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The Association of American Universities

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MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois

CLARK UNIVERSITY,
Worcester, Massachusetts

COLUMBIA UNIVERSITY,
New York, N. Y.

CORNELL UNIVERSITY,
Ithaca, N. Y.

HARVARD UNIVERSITY,
Cambridge, Massachusetts

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland

THE LELAND STANFORD JUNIOR UNIVERSITY,
Palo Alto, California

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania

PRINCETON UNIVERSITY,
Princeton, New Jersey

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin

YALE UNIVERSITY,
New Haven, Connecticut

CALENDAR OF CONFERENCES

- FIRST ANNUAL CONFERENCE** (organization)
Chicago, Illinois, February 27-28, 1900
- SECOND ANNUAL CONFERENCE,**
Chicago, Illinois, February 26-28, 1901
- THIRD ANNUAL CONFERENCE,**
Chicago, Illinois, February 25-27, 1902
- FOURTH ANNUAL CONFERENCE,**
New York, N. Y., December 29-31, 1902
-

OFFICERS

1903-1904

President—The representative of the University of Chicago.

Vice-President—The representative of Princeton University.

Secretary—The representative of Columbia University.

Additional members of the *Executive Committee*—The representative of the Leland Stanford Junior University; the representative of the Catholic University of America.

THE FOURTH ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

MONDAY, DECEMBER 29, 1902

MINUTES

12:45 P. M.—The delegates were received by the representatives of Columbia University in the Trustees' Room, and upon invitation of the University took luncheon in University Hall at 1 o'clock.

2:30 P. M.—The FIRST SESSION was called to order in the Trustees' Room of Columbia University at 2:30 P. M., with Mr. Hadley, of Yale University, in the chair.

The following representatives of the Universities were present:

UNIVERSITY OF CALIFORNIA—Mr. A. O. Leuschner, Mr. Irving Stringham.

CATHOLIC UNIVERSITY OF AMERICA—Mr. Thomas J. Conaty, Mr. Daniel W. Shea.

THE UNIVERSITY OF CHICAGO—Mr. William Rainey Harper, Mr. L. F. Barker, Mr. Ernst Freund, Mr. E. H. Moore, Mr. Albion W. Small.

CLARK UNIVERSITY—Mr. Stanley Hall.

COLUMBIA UNIVERSITY—Mr. John W. Burgess, Mr. J. Howard Van Amringe, Mr. George W. Kirchwey, Mr. E. D. Perry, Mr. T. S. Fiske, Mr. F. P. Keppel, Dr. M. Allen Starr, Mr. R. Tombo, Jr.

CORNELL UNIVERSITY—Mr. T. F. Crane, Mr. E. W. Huffcut.

HARVARD UNIVERSITY—Mr. Charles William Eliot, Mr. John H. Wright.

THE JOHNS HOPKINS UNIVERSITY—Mr. Paul Haupt.

UNIVERSITY OF MICHIGAN—Mr. Martin L. D'Ooge.

UNIVERSITY OF PENNSYLVANIA—Mr. William Romaine Newbold, Mr. Josiah H. Penniman, Mr. Charles H. Frazier, Mr. E. C. Kirke.

PRINCETON UNIVERSITY—Mr. Henry B. Fine, Mr. Andrew F. West.

THE LELAND STANFORD JUNIOR UNIVERSITY—Mr. Timothy Hopkins, Mr. Douglas H. Campbell, Mr. Vernon L. Kellogg, Mr. Oliver P. Jenkins.

UNIVERSITY OF WISCONSIN—Mr. E. A. Birge.

YALE UNIVERSITY—Mr. Arthur Twining Hadley, Mr. Russell H. Chittenden.

The minutes of the meetings of the preceding year were approved as printed.

After discussion, a motion to invite a representative of the Confederation of Graduate Clubs to be present at the sessions of the Association was lost.

The Association of American Universities

Mr. Leuschner, of the University of California, was requested to prepare a report of the meetings for the press.

The invitation of the Alumni Council of Columbia University to attend a banquet on Tuesday evening, December 30, was accepted with the thanks of the Association.

Upon motion, the chair appointed a Committee of Three—Mr. Crane, of Cornell University; Mr. Wright, of Harvard University; and Mr. Stringham, of the University of California—to convey to the president of Columbia University the feelings of sympathy of the Association in the circumstances which necessitated his absence from the Conference.

Mr. Penniman, of the University of Pennsylvania, presented a PAPER on "The Certificate Method of Admission to Colleges and Universities—(a) from Accredited Schools; (b) from Schools Not Examined by the University or Formally Accredited."

The following delegates took part in the DISCUSSION of the paper: Mr. Harper, of the University of Chicago; Mr. D'Ooge, of the University of Michigan; Mr. Hall, of Clark University; Mr. Crane, of Cornell University; Mr. Stringham, of the University of California; Mr. Fiske, of Columbia University; Mr. Wright, of Harvard University; Mr. Huffcut, of Cornell University; Mr. Haupt, of the Johns Hopkins University; Mr. Fine, of Princeton University; Mr. Birge, of the University of Wisconsin.

The Secretary stated that through an inadvertence a minute of the Executive Committee authorizing the Secretary to invite nominations for new members from the Universities represented in the Association had been overlooked.

The session adjourned at 5:05 P. M.

SECOND DAY'S PROCEEDINGS

TUESDAY, DECEMBER 30

MINUTES

The session was called to order at 10:30 A. M. by Mr. Hadley.

Mr. Eliot, for Harvard University, and Mr. Huffcut, for Cornell University, presented PAPERS on "The Requirements for Admission to Professional Schools."

The following delegates took part in the DISCUSSION of the papers: Mr. Hadley, of Yale University (Mr. Crane presiding); Mr. Eliot (supplementing his paper); Mr. Barker, of the University of Chicago; Dr. Starr, of Columbia University; Mr.

Kirchwey, of Columbia University; Mr. Leuschner, of the University of California; Mr. Huffcut (supplementing his paper).

The chair, which had been authorized at the previous session to appoint a Nominating Committee, announced the names of the committee as follows: Mr. Hall, Mr. D'Ooge, and Mr. Birge.

The session took a recess at 1:10 P. M.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held immediately after the adjournment of the session. The representatives of the University of Chicago, Yale University, Johns Hopkins University, the University of Pennsylvania, and Cornell University were present.

The following financial report was presented by the Secretary, and approved:

Receipts:

From pro rata assessments of \$15 each for each institution represented in the Association (two assessments remaining still unpaid) - - - - -	\$180.00
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Expenditures:

For printing and distributing copies of the "Third Annual Conference" - - - - -	\$212.54
Printing of programs of the meeting - - - - -	8.25
Telegrams - - - - -	1.28
Postage and stationery - - - - -	4.00
Expenses incurred in connection with report of Mr. Birge, Chairman - - - - -	11.05
	<hr/>
	\$237.12

THIRD SESSION

Upon motion, the chair was authorized to invite Mr. George R. Parkin to address the Association at some time during the proceedings of the Fourth Session on the subject of the Rhodes Scholarships.

It was voted by the Association to approve the financial report of the Secretary, as recommended by the committee (see above).

The Association went into Committee of the Whole in quasi-executive session, and the Chairman presented the following report of the Executive Committee:

The matters referred to the consideration of your committee by the vote of the Association of American Universities on February 26, 1902, involve two separate questions. One question concerns the range of topics which should be treated by the Association in its discussions, and the desirableness of a change in the constitution to provide for such increased

range. The other concerns the policy to be adopted with regard to increasing the membership of the Association, in order that the numerous applications submitted to this body may be wisely and intelligently handled.

With regard to the first of these questions there is no difference of opinion in the minds of the committee. It is thought desirable to include within the scope of the discussions of the Association all those questions and problems which arise in organizing really advanced instruction in the various departments of university life. It is impossible to draw a distinction between studies which are non-professional and those which are professional in their character; because in our modern institution much of the so-called non-professional work of the graduate department is intended as a preparation for the calling of the teacher, and much of the work of the professional schools is occupied with actual research. The problems of the different departments are so connected and interwoven that they have to be treated together in the universities themselves; and it seems desirable that a body like the Association should treat them in the same way.

Your committee does not, however, believe that an amendment of the constitution is necessary in order to make this change possible. The very fact that the different things are thus necessarily connected is of itself sufficient, in the opinion of your committee, to justify it in treating these wider problems as germane to the original purposes of the Association without any alteration in the constitution itself—a thing which, when not absolutely needed, seems to your committee unwise. In preparing the program of the Association's next meeting your committee has felt justified in including the widened range of topics, without waiting for any constitutional change.

With regard to the second question, concerning the enlargement of the membership, there is more difference of opinion. Two opposing lines of argument have been presented, each of which, judged by itself, has much strength. Those who advocate an increase say that it is unjust to institutions which are doing excellent work to leave them out of a body of this kind. They think that the effect of omitting these institutions will be to prejudice the influence of the Association, to stimulate jealousy, and perhaps to lead to the formation of a rival body which would be more extended in its scope. On the other hand, those who oppose such increase of membership say that the value of the discussions which we have hitherto had is in large measure the result of the smallness of the numbers; and that any attempt to admit all those institutions whose claims of merit we cannot publicly disprove would make the body so large as to interfere with its original purpose.

The real question seems to be one concerning this fundamental purpose. Is our body an organized association, intended to take in all who reach a certain grade of merit, and charged with the duty of establishing an objective grading and standing among universities? Or is it a club for mutual improvement and enjoyment, which can exclude members not likely to increase this improvement or enjoyment, without the necessity of telling them the reasons for this exclusion in a form available for publication? According as we regard the Association in the one light or the other, our policy with regard to the membership will be totally different.

Which of these policies will finally be adopted must ultimately be made the subject of vote by the Association itself, after the matter has had full discussion. There is a difference

of opinion on this subject in the minds of your committee. But its members are practically unanimous in advising against any considerable enlargement of the membership until this question of principle has been carefully considered and intelligently debated.

The University of Pennsylvania, through its representative on the Executive Committee, has suggested a carefully prepared plan for carrying into effect the views of those who desire a comprehensive enlargement of the Association. This plan proposes that members of the Association be recognized as belonging to three classes:

1. The charter members, those to whose initiative the Association owes its being.
2. The state universities, in order to secure (a) adequate territorial representation; (b) to bring the development of the higher education, in so far as it is subject to public control, in close touch with all the greater universities, whether subject to public or private control.
3. Those institutions under private control which are now concerned in any large measure in the work of higher education and should therefore in like manner be brought in touch with other universities engaged in similar work.

To carry out these ideas, it proposes the following amendment to Article III of the Constitution:

1. That section 1, "Qualifications," and section 2, "Initial Membership," remain unchanged.

2. That section 3 be stricken out, and that in its place the following section be inserted:

"Section 3. *New Members.* (a) Any university which has been created by the legislature of any state in the Union as an integral part of the system of public education of said state, and is wholly supported or designed to be wholly supported by public taxation, shall be entitled to membership in this Association.

"(b) Any university which does not come under the provisions of section 3 (a) shall be entitled to membership in this Association upon proving conformity to the following conditions: It must maintain under the control of one corporation advanced instruction of a high academic standard in three of the following five subjects: (1) Pure Science, including in that term work in language, literature, history, economics and social science, mathematics, physics, chemistry, and the biological sciences, whether graduate or undergraduate; (2) Applied Science, including in that term all branches of architecture, civil and mechanical engineering, metallurgy and other branches of industrial chemistry; (3) Medicine, including in that term medicine in the narrower sense, dentistry, and veterinary medicine; (4) Law; (5) Theology."

3. This Association shall determine by a three-fourths vote of its total membership whether a given institution does or does not come within the provision of section 3 (a) and (b).

Section 4. Applications and proposals for membership shall be made to the institution holding the presidency of the Association. As soon as possible thereafter the several members of the Association shall be informed that the institution in question has applied or has been proposed for membership, but no final vote shall be taken upon the question of granting or refusing membership in the Association to any university unless the members of the

Association have been informed of the application at least thirty days before the date of the annual meeting.

Your committee is not prepared to make a positive recommendation that these changes be carried into effect. But it takes pleasure in submitting them to the members of the Association as an intelligent effort to deal with a difficult question, and believes that they can be profitably made the basis of discussion at the coming meeting. Should any plan of the kind here outlined, after discussion, command the assent of a majority of the members of the Association, the whole question of policy is settled thereby. Should it fail to command the assent of such a majority, it will mean that the Association remains for the present a club for mutual improvement and enjoyment; and new applications for membership therein can be dealt with accordingly.

All of which is respectfully submitted.

Upon motion, the first three paragraphs of the report were adopted.

After considerable discussion, it was unanimously

Resolved, That the report of the Executive Committee be modified by substituting for Sections 3 and 4 a statement that the membership of the Association should not be enlarged in any such manner as would require an amendment to Article III of the Constitution.

Upon motion of Mr. West, it was voted that, for the sake of clearness, the words "only such nominations as have been approved by the Executive Council" be inserted in the resolution passed by the Association upon the motion of Mr. Magie, of Princeton University, on February 28, 1901 (see JOURNAL OF PROCEEDINGS AND ADDRESSES OF THE FIRST AND SECOND ANNUAL CONFERENCES, pp. 22, 23).

After considerable discussion, it was then

Resolved, That Mr. Magie's resolution regarding the membership of the Association be rescinded.

It was then moved by Mr. Eliot that the following resolution be adopted:

Resolved, That nominations of new members shall be made in open meeting; that these nominations shall be referred to the Executive Committee; that the Executive Committee shall report favorably such nominations as they deem it wise to so report to another meeting of the Association; that then the selected nominations so reported favorably by the Executive Committee shall be voted upon in open meeting by ballot, and that three-fourths of the ballots must be in the affirmative.

The resolution was adopted by the Association after it had been amended, upon motion of Mr. D'Ooge, by the addition of the words "providing that no name can be finally acted upon at the same annual meeting at which it was originally proposed."

The Committee on Nominations reported as follows:

For President—A representative of the University of Chicago.

For Vice-President—A representative of Princeton University.

For Secretary—A representative of Columbia University.

For additional members of the *Executive Committee*—Representatives of the Leland Stanford, Junior, University and of the Catholic University of America.

The nominations of the committee were accepted, and the officers nominated declared elected.

The meeting then adjourned at 5:15 P. M.

A DINNER in honor of the delegates to the Fourth Annual Conference of the Association of American Universities was given, under the auspices of the Alumni Council of Columbia University, at Sherry's, at 7:30 P. M. on Tuesday, December 30.

Mr. Van Amringe, Dean of Columbia College, was in the chair, and addresses were made as follows:

"The American Universities," Arthur Twining Hadley, Yale, '76.

"The Universities and Modern Business," James W. Alexander, Princeton, '60.

"The Universities and Public Affairs," Wayne Mac Veagh, Yale, '53.

"The Universities and the Learned Professions," Charles W. Eliot, Harvard, '53.

THIRD DAY'S PROCEEDINGS

WEDNESDAY, DECEMBER 31

MINUTES

The FOURTH SESSION was called to order, with Mr. Crane, of Cornell University, in the chair, at 10:30 A. M. on Wednesday, December 31.

Mr. Keppel, for Columbia University, presented a Paper on "Uniformity of University Statistics—(a) of Enrolment; (b) of Expenditures."

Upon motion, it was

Resolved, that the discussion of the paper presented by Columbia University be made a special order for the session of the Association for the ensuing year.

On invitation, Mr. George R. Parkin addressed the session on the subject of the Rhodes Scholarships.

The following delegates then took part in an informal DISCUSSION, Mr. Parkin replying to such requests for information as were addressed to him: Mr. West, of Princeton University; Mr. Eliot, of Harvard University; Mr. Duniway, of the University of California; Mr. Hadley, of Yale University; Mr. Birge, of the University of Wisconsin; Mr. Harper, of the University of Chicago; Mr. Stringham, of the University of California.

Upon motion, the Association expressed its thanks to Mr. Parkin for his interesting address, and assured him of its deep interest in the matter and of the readiness

of the delegates to advise or aid him or the committee in any way, in their individual capacities.

The thanks of the Association were extended to Columbia University for the arrangements made for the meetings.

Certain nominations of institutions for membership in the Association were made by the delegates and referred to the Executive Committee.

The University of California and the Leland Stanford, Junior, University extended to the Association an invitation to hold its next meeting in San Francisco. Mr. Hadley, of Yale University, extended to the Association an invitation for a meeting at New Haven; and Mr. Conaty, of the Catholic University, an invitation for a meeting in Washington.

After an informal discussion, these invitations, and also the question of the time of the next meeting, were referred to the Executive Committee.

Upon motion, the Association adjourned *sine die*.

NOTE.—The discussions following the Report of the Executive Committee on the Scope and Membership of the Association, the address of Mr. Parkin and the informal discussion following it, and the addresses made at the dinner to the delegates, appear in full in the stenographic record of the Proceedings of the Fourth Annual Conference, which may be consulted at any time by representatives of the members of the Association.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held on Wednesday, December 31, 1902, immediately after the adjournment of the meeting of the Association. There were present all the members of the Executive Committee, as follows:

For the University of Chicago, *President*—Mr. Harper.

For Princeton University, *Vice-President*—Mr. West.

For Columbia University, *Secretary*—Mr. Perry.

For the Leland Stanford Junior University—Mr. Duniway.

For the Catholic University of America—Mr. Conaty.

The procedure to be followed in action upon admissions to membership in the Association was discussed. It was voted that the Secretary be asked to collect such information concerning the candidates proposed as may be accessible to him, to be presented by mail to the members of the committee.

It was voted that the question of time and place of the next meeting and the selection of topics to be discussed at such meeting be settled by correspondence, the Secretary being instructed to request from the members of the Association an expression of their preferences as to time and place of the meeting and also suggestions of topics.

Committee adjourned at 1:20 P. M.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE FOURTH ANNUAL CONFERENCE

THE FIRST SESSION

THE CERTIFICATE METHOD OF ADMISSION TO COLLEGES AND UNIVERSITIES^{*}

PAPER READ BY JOSIAH H. PENNIMAN, OF THE UNIVERSITY OF PENNSYLVANIA

The subject assigned to the University of Pennsylvania for discussion in a paper is stated on the program as follows: "The Certificate Method of Admission to Colleges and Universities, (a) from Accredited Schools, (b) from Schools Not Examined by the University or Formally Accredited."

It is the common practice of universities and colleges in the United States to give credit toward their degrees for work done by a student at another university or college, provided that university or college may be dignified by the somewhat vague, but eminently useful, term "reputable." Official statements of work done and of honorable dismissal are invariably required of a candidate for admission to one college who asks credit for work done at another. We know in a general way about the kind of work done at most colleges from which candidates for admission come, even though we have not made a careful examination of the institutions on the premises. The catalogue and the general reputation of the faculty and courses are usually regarded as sufficient evidences of the quality of the work for which the candidate asks, and is usually given, credit. There are few institutions in this country that will not grant such credit merely on presentation of satisfactory statements, without actual examination of the candidate. The student will be tested quite thoroughly by the actual work of the class-room, and inferior or inadequate preparation for his work will soon be made apparent. This is the safeguard of the admitting institution.

* Mr. Penniman explained, before reading his paper, that certain statistical data that he had obtained by careful circularization had been lost, and that he was compelled to present the paper in a form slightly different from what he had intended. He explained also that he had tried to avoid covering exactly the same topics discussed at the recent meeting of the Association of Colleges and Preparatory Schools of the Middle States and Maryland, held at Baltimore on Saturday, November 29, 1902.

The transition from school to college is, however, a different thing from the changing from one college to another, because, say what we will, and theorize as we may about it, school work and school methods, as usually known in this country, differ from college work and methods. Fortunately or unfortunately, there is a very definite break at the point at which school ends and college begins.

As a general rule, to which there are a few exceptions, colleges print in their catalogues certain definite requirements that must be satisfied by the candidate before he will be admitted to the college course. These requirements are usually stated to be such attainments as may be expected of a candidate who has pursued in school courses of study consisting of, or including, certain subjects in definite amounts stated by the college.

There are differences of opinion as to what a college may reasonably require, and of usage as to what colleges actually do require, of candidates for admission, but, in spite of this, the amount of preparation indicated by the term "college-entrance requirements" is, at least so far as concerns "reputable" colleges, fairly uniform.

The question before us is: Who shall determine when a candidate for admission to college has satisfied the requirements or is "fitted for college"? Possible ways of deciding this are:

1. The college shall accept as evidence of preparation only the proved ability to attain satisfactory marks in examinations set and conducted by the college.

2. The college shall accept, in lieu of such examinations, an official statement of the principal, or other proper official of the school, to the effect that the candidate has pursued satisfactorily in the school the course of study required by the college in its statement of entrance requirements, and that he is prepared to take up the work of the college course. This is the ordinary "certificate system."

3. The school shall permit the college to conduct the regular school examinations and to mark the papers, thus placing the teaching in the hands of the school and the examining in the hands of the college. This applies especially to such subjects as are taught in the school and accepted by the college as a part of its entrance requirements. This system is described in the catalogue of the University of Chicago and is in essentials the Regents' system of New York.

4. The school and college, or schools and colleges, shall combine for the purpose of making out the examination questions and marking them so that the decision shall be the result of joint action. This plan is represented by the College Entrance Examination Board.

In any case, in order to "accredit," the college ought to know concerning a school—

1. The kind of teachers and the kind of teaching.

2. The amount of time devoted to each subject during the school year.

3. The amount of the subject covered in that time.
4. The general facilities afforded by the school for doing the necessary work properly.

If these are found to be satisfactory in the subjects required for admission to a given course, the school may be accredited. We may judge of the probable preparedness of a student by inspecting the school so far as it is possible to do so, in regard to the points above noted. We may supplement this by the record of the work done in college by students who have had their training at that particular school.

If the conditions at a school are such that it is reasonable to assume *a priori* that the results will be satisfactory, and if we find *a posteriori* that the students from that school are, as a matter of fact, well prepared, as is shown by their actually doing successfully the work for which they were said to be prepared, we have the only basis on which to form an opinion concerning that school. We may find this to be true of certain subjects as taught in a school and not true of other subjects, in which case certification of subjects may be adopted. This is the idea of the California system of inspection to be mentioned later.

Two systems of inspecting schools with a view to accrediting them to the university are found in Michigan and California, which may be taken as thoroughly representative examples of state institutions having an official relationship to the schools of the state.

In President Wheeler's report, December, 1900, is the following statement of the California mode of school inspection :

The method hitherto pursued places the individual departments of study in the schools in direct relation to the corresponding departments of the University. The theoretical advantage of bringing to the different departments of the schools the stimulus of direct contact with the higher teaching of corresponding subjects is perfectly apparent. The theoretical disadvantage of regarding the schools by parts and putting them into connection with parts, rather than the whole of the University, is also plain. The new plan proceeds by correction rather than by overturning, and attempts to renew the advantages of the old while remedying the defects. It is a tentative and provisional plan. Concerning its success it is vain to prophesy, as it has to be tried. One benefit which, it is hoped, may incidentally accrue to it is the prevention of the intermittent interruptions which have come to the work of the departments, and to an apparently unnecessarily large number of individual professors, through the necessity of making the annual school visitations. The tendency of the new plan is to concentrate the work upon fewer men, who themselves concentrate their examining tasks upon a whole semester. The plan is given in the following, as adopted by the committee:

SCHOOL COMMITTEE'S REPORT

I. The examination by departments, when wisely conducted, has shown itself productive of good results in stimulating and interesting teachers. Granting that our procedure may

now be revised with profit, changes should be made conservatively, gradually; preserving the present good features and removing weaknesses.

II. It seems advisable to divide the matriculation subjects into two groups, to be treated differently for the year 1900-1901:

A	B
English (Babcock, Richardson).	Greek (Clapp).
Mathematics (Drew).	Biological Sciences (Setchell).
History (Babcock).	French (Chambers).
Latin (Richardson).	German (Centner).
Physical Sciences (Drew).	Drawing (Kower).

Group A consists of subjects whose scope and methods are, at the present time, more fully determined; whose status in the schools has become stable. Group B contains subjects which, for various reasons, seem to need careful attention to their development.

III. It is proposed to assign three examiners to group A, and divide the five subjects among them. The details of this division will depend to some extent upon the persons selected. It seems natural to give mathematics and physical sciences into the hands of one person. Then English, Latin, and history would remain for division between two.

IV. It is proposed to assign one examiner to each of the subjects in Group B, counting biological sciences as one, and leaving the question open whether French and German shall count as two or one.

V. It is suggested that, while these modifications be put into operation for the year 1900-1901, the further course to be pursued be carefully considered. The indications point toward a (numerically) smaller commission, or one commissioner even. We must watch developments. It is thought, however, that the examination by the University departments, though made a subordinate feature hereafter, should be retained in some form. The departments might "intervene" at intervals, or in special contingencies.

VI. Should not the schools be summoned, in the immediate future, to do something like making propositions from their side, both as to procedure in accrediting and the subjects for matriculation? Under the second branch would fall the subjects to be included, and the flexibility of the grouping.

Some of the changes suggested by President Wheeler have gone into effect since the report quoted was written.

The Michigan plan, as stated by Professor A. S. Whitney in a paper read during the meeting at Baltimore of the Association of Colleges and Preparatory Schools of the Middle States and Maryland last November, and furnished me by the courtesy of Dr. H. V. Ames, secretary of that association, is as follows:

The inspector visits the school without previous notification. He learns the population of the city, the total enrolment of the schools, the enrolment in the high school, and the number of teachers employed, both in the grades and in the high school. He acquaints himself with the teachers of the high school, inquires concerning their academic and professional preparation, the subjects they teach, and the number and average length of their daily class periods. He visits the class-rooms, analyzes the work of the teacher, and

endeavors to determine the efficiency of both by his aim and plan of lesson, his mastery of the subject, his skill in adapting the lesson to the needs and capacities of his pupils, his ability to analyze and classify difficulties, his power to attract and hold attention, his skill in the art of questioning, his assignment of the lesson; he also notes the manner in which the pupils have attacked the lesson, their habits of thought and study, and the general spirit and progress of the class. He examines the course of study, the text-books used, the library and laboratory facilities; he takes note of the plan of organization, the character and methods of discipline, and the intellectual and moral tone of the school; and he ascertains the average size of the graduating classes, the number of graduates attending higher institutions of learning, the number now preparing for such institutions, and the general attitude of the board of education, the patrons, and the community toward educational affairs generally. Finally he examines the structure, capacity, heating, lighting, and ventilating of the school buildings. All these facts and more are recorded by the inspector and reported back to the proper committee, or to the faculty, as a basis for determining what relationship should exist between the high school and the University.

At least four conditions must be fulfilled before an applicant can receive recognition at the hands of the University:

1. The applicant must have received his preparatory training in an accredited high school.
2. The applicant must be a graduate of an accredited high school.
3. The applicant must present a regulation certificate furnished by the University and properly filled and signed by the superintendent or principal of the high school. (This covers amount of work, marks or grades in each subject, text-book, etc.)
4. The applicant must furnish a recommendation from the superintendent, high-school principal or faculty, attesting their belief in his ability to pursue university work with pleasure and profit to himself and credit to the University.

This system, with slight variations, obtains in connection with many of the state universities of the middle West and Northwest. Minnesota has no special inspector, his work being done by a State High School Board. In Indiana the work is done by the State Board of Education, the various districts being apportioned to different members.

It will be observed that the California plan has reference to particular subjects, each of which is investigated by a specially appointed inspector, who reports favorably or otherwise on that subject. The Michigan plan is to have all the inspection done by one man, who reports on the *whole* school and its curriculum. There can be little doubt, after reading the reports, that the certificate plan or accrediting system for admission to college has worked well in Michigan, Wisconsin, California, and other states which have definite systems of inspection on the part of state-university officials, the university being the head of the public educational system of the state. More is accomplished by these systems in these states than the mere deciding of whether a boy or girl is on graduation from a high school ready to enter a college.

In the case of colleges which have no official relation to the school system, the question is a narrower one, and concerns only the preparedness of pupils at the end of the school course to satisfy the entrance requirements. Of course, these colleges are just as much interested in and affected by the conditions existing in the schools as the state universities are, but they have no official relation to the schools by means of which they can step in and correct what they may consider existing mistakes or evils.

In the case of private schools, not under state control, precisely similar systems of inspection must be used as in the case of public schools. The acceptance or refusal of the certificate of a given school is the only means in the power of the college for influencing that school.

All these methods are in a sense *a priori*, and, like all *a priori* reasoning, can give us only a degree of probability. The college may have perfect confidence in the opinion of a school-teacher (or of a group of teachers) in regard to the fitness of a boy to enter college. But the college can have positive assurance of his fitness only after he has demonstrated by actual work done in college that he *is* prepared. This is true whether the boy has entered by examination or certificate. The great change from school to college affects a boy's work and must be considered in any estimate of the boy's ability or preparation. It is only fair to the schools that this be borne in mind. The greater freedom from restraint of college life sometimes upsets a really good student during his Freshman year, and particularly during his first term. Failure to pass examinations at the end of the first term or of Freshman year is not necessarily due to deficient preparation for college work. Such failure must not always be blamed on the school; it may or may not be the fault of the school.

The universities forming this Association may be taken as representing the best that is to be found in American college education. The differences in their rules and regulations are considerable on this point of entrance requirements and terms of admission. I wrote to each university seeking information and expressions of opinion on the question of terms of admission. The replies reveal an interesting state of affairs, and I have summarized them as follows:

Harvard: "Harvard College admits students from secondary schools only by examination."

Yale: "We do not admit to any of the undergraduate departments by certificate."

Columbia: "Columbia University does not admit any students upon the certificate system."

Princeton: "Princeton University admits only by entrance examination."

Johns Hopkins: "The matriculation examination may be divided, and a part of the subjects passed in one year and the rest a year later, according to the regulations prescribed below. When a school, approved by the Academic Council, shall certify that a candidate has satisfactorily completed all the studies requisite for matriculation, such candidate will be

exempted from examination in all except the following subjects: trigonometry, analytic geometry, Cicero or Virgil (as the candidate may prefer), Latin prose composition, Homer or Herodotus (as the candidate may prefer), Greek prose composition, the minor courses in French and German, English, and science. The examination in these subjects may be divided between June and October of the same year, but, except in the case of English, not between successive years. Graduates of Baltimore City College are admitted without examinations."

Pennsylvania: "Candidates for admission to the Freshman class of the College enter by examination; but diplomas of public high schools may be accepted as complete or partial certificates. Candidates who present such diplomas will be referred to Faculty Committee No. 1, who will examine each case and decide whether the diplomas shall be accepted in lieu of examinations, and what subjects they properly cover. This privilege is granted tentatively to the public high schools, for the reason that their curricula are adjusted primarily to the needs of students not making a special preparation for college."

Cornell: Admits "8 per cent. by examinations, 57 per cent. by certificates, 35 per cent. by Regents' credentials."

Wisconsin: "Over 90 per cent. are admitted by certificates from accredited schools."

Chicago: "Not more than 2 per cent. of entering students take the examinations" (*i. e.*, 98 per cent. are admitted by certificates from accredited schools).

Michigan: "From seven-eighths to nine-tenths enter by certificates from accredited schools."

California: Admitted 83 per cent. on certificates from accredited schools in 1899-1900. See President's report, p. 48, December, 1900.

Catholic University: "The university admits by diplomas from good colleges and theological seminaries, in lieu of entrance examinations. If the applicant for admission has no diploma, he must undergo such tests as the respective faculties prescribe."

Clark University: "Our experience of this first year of the College leads us to suspect that there is a better way to get a Freshman contingent than by the traditional examination, or even by the highly organized and uniformatized system of certification. We have found no reason to regret our experimental policy of admitting men apparently prepared to the work itself as an examination. This method asks for certificates and other credentials, but puts every man entered, who says he can do the college work, on trial of his ability to do it actually."

Leland Stanford Junior: "Perhaps 3 per cent. are admitted wholly on examinations" (*i. e.*, 97 per cent. are admitted on certificates from accredited schools). "We have made full use of the results of this inspection [*i. e.*, inspection by the University of California], and we also have been able to make use of the accrediting of other universities in other states. One peculiarity of our system is that, with the exception of English composition, we do not prescribe subjects for admission. We require a certain quantity of preparation."

I have stated thus far (1) the general problem of transition from school to college as regards the determination of when a candidate has satisfied the entrance requirements; (2) two typical and thoroughly representative systems of school inspection

by universities with a view to accrediting schools; (3) the general status of the certificate system as represented by the practice of the institutions forming this Association.

It is interesting to note the replies received from some representative schoolmen to questions as to the advantages and disadvantages of the certificate system as affecting the pupil in school. They differ radically on all points, the differences being especially noticeable between the opinions of eastern schoolmen and western. Here are two typical replies from public high-school men, the first western, the second eastern:

1. "The certificate system stimulates pupils to keep up their work. No one likes to take examinations."

2. "Under certificate system the pupil does not apply himself as closely as he should." These replies are typical, and show that the question depends almost wholly on the way in which the granting of certificates is administered by the schoolmaster—in other words, what kind of a school he keeps. If the student knows that he will not get a certificate unless he keeps up his work, he will keep it up.

As to the second part of the subject assigned to the University of Pennsylvania, I can only say that I know of no reputable college which will accept a certificate of preparation from a school entirely unknown to it. In individual cases, pupils may from time to time apply for admission from schools from which no students have come before, and it may be necessary either to refuse to accept any certificate or to accept the certificate "on probation" after examining the catalogue of the school, its course of study, etc., and making supplementary inquiries concerning it. Some form of investigation is always made. The admitting of a student on probation is often rather the admitting of the school on probation, the work of the student determining whether his probation and that of the school are to be continued or terminated.

In conclusion: The West is fairly committed to the certificate plan. A few universities in the East are, as far as their practice is concerned, opposed to the certificate plan, while others sanction the use of certificates either to the full extent or in part. It is in the private school, tributary to the various colleges and universities, that the certificate problem presents itself in its most troublesome form, and it is the private school that presents the most troublesome problem to the college. If *all* colleges for which the students of a given school are preparing accept certificates, or if *all* require examinations, there is at least uniformity which is usually desirable. If, however, some colleges accept certificates and others do not, the candidates for various colleges are, while yet in school, divided into two groups. The result which usually follows is indicated in a reply made by a prominent eastern schoolman: "Unless all colleges employ the certificate system, the use of it for certain colleges will prove a disadvantage to the pupils in the preparatory school who know that they will

go up on certificates rather than on examination. Examination holds before them a standard to which they must live up." In the words of this same teacher, who favors some form of certification rather than the present system of entrance examinations, "the main trouble about college-entrance examinations is that the college men seem to have no conception of the state of mind of an entering pupil at that peculiar stage. They present an exhaustive paper, usually far too comprehensive for the time allowed, mark rigidly, and condition students who are perfectly able to meet the one essential of entrance examination—ability to carry on college studies in the Freshman year."

DISCUSSION ON THE CERTIFICATE METHOD OF ADMISSION TO COLLEGES AND UNIVERSITIES

[ABRIDGED FROM THE SKETCHOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HARPER: At first sight I think this topic might be criticised on the ground that it has to do with the college work, while the object of this Association has been rather the consideration of questions of a university character; but the professional schools are a part of the interest of this Association, and the question of admission to the professional schools is, it seems to me, involved. It is of great interest to us to know whether these institutions which have adopted the certificate plan, and those that, on the other hand, follow the examination plan, pursue the same method with reference to professional students not holding collegiate degrees which is pursued with reference to the regular undergraduate students.

MR. D'OOGHE: If I am not mistaken, the University of Michigan is the first institution that made a trial of this experiment, and I think I may safely say that no experiment which our university has ever entered upon has so completely fulfilled our expectations. I recognize, however, that what is best for us may not necessarily be best for some of the other universities, especially here in the East.

At the present time I think there are 223 accredited schools that send their students to the University of Michigan—fully two-thirds in Michigan, and the others outside the state. One very powerful reason for entering upon this policy was to influence the educational system of our state, and here especially the experiment has proven most helpful. We believe that this is after all the most satisfactory method of examination; that if the principal of an accredited high school is an efficient man, he is a better judge as to the fitness of the student to pursue his work in the university than any form of examination we can prescribe. And if the student fails in his work after entering, this reacts upon the school which certifies him; it discredits the school; and a school takes good care when it has made a mistake of that sort never to repeat it, if possible. Our records show that the percentage of failures of students from accredited schools is not quite so large as of those who come from schools not accredited. The difference therefore is, on the whole, in favor of the accredited system as opposed to the system of examination. There is the utmost harmony and co-operation between the schools and the universities in the matter of changing requirements or the raising of standards for admission.

The system, we find, acts as a very powerful stimulus in certain communities. For instance, the high school in a small community is not what it ought to be. We send our inspector there, upon invitation, and he reports the school deficient in certain directions. This report is sent to the school board. In that way an influence is brought to bear to raise the school to a higher standard.

It has been regarded naturally as a matter of credit and pride for a school to be put upon our accredited list, and it has undoubtedly stimulated interest in higher education when representatives of the university visit any school.

One safeguard in the system obtaining at the University of Michigan was perhaps not sufficiently emphasized: a standing committee of nine members of our faculty, representing various departments, always looks over the courses of study and the equipment in a school, the laboratories, and so on, before we finally pass upon the school and accept or reject the reports made by our inspector.

MR. HALL: I was extremely interested in the paper which has been presented here today; but if we are going to maintain the character of our work, we should discuss questions which have something to do with mapping out the course in the uncharted waters in which universities in this country are now sailing. A discussion concerning the admission of men to professional schools, or upon what the university departments have done to raise the standard of work in the colleges, would have been, I think, more in point. But in regard to this question it certainly is a very serious question to my mind whether or not the college does not sometimes devote too much energy to raising the standards of the secondary schools. Of course, great good has been done, but I believe that it can be overdone, not only for the interest of the preparatory schools, but of the college itself. It can lay great stress upon certain steps and neglect others. Take the stress laid upon Latin and Greek by our great universities, and their neglect of science. A Harvard professor has recently stated that it is entirely possible for a man of average preparation and average ability to go through Harvard College and graduate without studying over half an hour a day. Has this possibility of easement any connection with the work of raising standards? Would it not be better if more energy were devoted to enforcing the high standard of industry upon the young man already admitted into the college and eighteen or nineteen years of age, when growth settles, rather than to raising the outside standards in the four years that precede that age?

But what is the effect of over-emphasis on the high schools? It is, first, magnificent. But later, the college requirements alone enlist the best energies, and the high school rather loses the function of being the people's college. I do not believe that the people of this country, when they really wake up to the condition of things, are going to continue it. The percentage of those students who go to college is very small, and is steadily decreasing. It seems to me that a very much larger question than the question of Certificate *versus* Entrance Examination is: "What is the very best kind of education that a young man can receive during the four high-school years?" When that is once determined from a high educational standpoint the college will be glad to accept it. The entrance examination will cut no more figure in this country than it does in England, or Germany, or France, where it is a mere form.

MR. CRANE: The question in which we at Cornell are primarily interested is that of

the private school. With our New York system of Regents, it had not occurred to us not to accept the high-school diploma, but we have been in doubt as to the private schools. The point in the recent discussion at the meeting at Baltimore was that if the system of accrediting schools could be made firmer, then they would cling to the certification system. I wish to ask Mr. D'Ooge whether the Michigan system extends to the private schools; also in what way the examination of the schools outside the state is reached.

MR. D'OOGHE: The private schools do not enter very largely into the matter with us in Michigan, as their number is comparatively very small. They and the public high schools outside the state are examined and accepted or rejected exactly as other schools are. All the inspection is frequently done by one man, but where the inspector is in doubt in a particular case another member of the faculty is sent with him.

MR. STRINGHAM: Supplementing Mr. Penniman's statement regarding the present system in California, I should like to call attention to one very interesting stage just beginning in our experience. Next year we shall have, in addition to our present staff, one more examiner (a member of our department of education), somewhat on the type of the Michigan examiner, who will spend the first half-year in examining the schools.

Our judgment with regard to our own experience of the certificate system—and of course it is peculiar, for California stands alone in this regard—is that it has been one of great profit in just the points mentioned by Mr. D'Ooge; it has been the making of secondary education in the state of California. When we began there were four schools. There are now, in round numbers, 115—20 per cent. being private schools. They are all treated exactly in the same way. I believe a vote of all the schools in the state would show an almost unanimous indorsement of the system as it has been conducted there.

I was glad that President Hall raised the question in regard to the high school as primarily the people's college. We have had from the beginning of our work that very idea in mind, and we have said to our co-workers in the field of secondary education: "We desire that the school shall be organized primarily as a fitting-school for life, and on that basis we will so organize the university that those so trained shall be able to profit by university education;" and we have worked out the scheme on that line. We have undoubtedly had an unusually favorable opportunity, for we entered the work eighteen years ago, before the high school came into existence in California. The state legislature has followed in the wake of the university's experience, and whenever a question concerning the organization of secondary education in the state has come up before the legislature there has been consultation with members of the state board of education, members of the secondary-school system, persons who were actively engaged in that work, and members of the university; and all of those forces have worked together in combination. A question in regard to fixing the requirements for admission to the university is likewise almost certain to be considered by a co-operative convention of educators in every department.

The problem, however, is a problem for local conditions to settle. If we had solely to test the competency of the student to enter the university, we should undoubtedly have adopted the examination plan and never tried the certificate method at all.

MR. FISKE: One might say that the high schools in California are a part of the university

system of California, and that the acceptance of the certificate of a high school is almost the same as the acceptance of the certificate from a teacher in the institution itself. Such conditions we cannot attain to on the Atlantic coast. We might approximate them by establishing a great syndicate composed of all the more important colleges and universities, and, by means of this syndicate, administer a certificate system. But the larger colleges and universities of the East draw their students not only from their own immediate neighborhood, but from all America. The College Entrance-Examination Board last year examined at least fifteen hundred candidates, more than half from private schools, for admission to some forty different colleges and universities, and the greater number came by ones and twos from schools all over the United States. A certificate system, even administered by a syndicate of universities, could hardly exert any very great influence upon isolated schools turning out only one or two candidates a year, sometimes only one in two or three years. My own personal opinion is that it would be very undesirable at the present time to extend any further the certificate system of admission. Taking the country as a whole, secondary education is in an unsettled, perhaps almost chaotic, condition. We must not judge by the two or three magnificently equipped high schools in some great city.

The two great desiderata are: first, that thoroughness shall supersede diffuseness; secondly, that there shall be uniformity of educational standards. I believe these two great ends can be obtained by means of a widespread uniform system of entrance examination. That a system of examination will work for thoroughness, I do not think can be doubted. It has been admitted by many of the presidents that the general adoption of the certificate system by the smaller New England colleges would have been disastrous had not Harvard and Yale by their examination system kept the schools up to their work. Not long ago it was found that, although the requirement in plane geometry of Harvard is nominally the same as it is at all the smaller New England colleges, at least twice as many hours of instruction were given by the schools to candidates for admission to Harvard as were given to candidates for the smaller colleges.

One of the most important results of a uniform examination system would be perfect uniformity of standards, and weaknesses which, under the certificate system, were overlooked for long periods of time can be immediately detected and remedied by the examination system. One of the most serious defects of the certificate system, as administered in the East, is its failure to secure this uniformity. Many colleges which have adopted the certificate system complain that one school grants certificates for a certain grade of work not recognized as satisfactory by another.

The certificate system, to be administered efficiently, must be supplemented by a system of supervision, and requires far greater administrative drudgery and responsibility than the examination system. Indeed, it would be practically impossible for a small college to administer efficiently a system which embraced a very large number of feeding schools.

I think I have collected evidence which shows that a certificate system carefully administered under conditions existing here in the East would lead to far greater embarrassment for the secondary-school teachers than the examination system. In New York some years ago we had under consideration the adoption of the certificate system, and all the more prominent schoolmasters came here and protested against its adoption. In Philadelphia, when the

University of Pennsylvania abolished the certificate system which was then in force, it was largely due to the influence of the best schoolmasters in the vicinity.

MR. WRIGHT read the following extract from a letter from PRESIDENT ELIOT:

"Our college has nothing to do with the certificate method. Personally, I think it an altogether undesirable method of admission to anything but a state university which maintains an effective supervision of high schools. As used in New England, I think it lowers the standard of private preparatory schools and colleges. If I should be asked what Harvard thinks, I should certainly answer that Harvard prefers the examination method, and there is no likelihood that it will be changed."

MR. WRIGHT continued: The headmaster of the Roxbury High School once told me that he thought the effectiveness of the generally adopted certificate system in New England, if there was any, lay entirely in the maintenance by Harvard and Yale and Bowdoin of strict entrance examination. We all agree that the standard for the B.A. degree for some students in our great colleges is altogether too low, especially where the number of students has very greatly and rapidly increased and the university has not really solved the problem of dealing with the enormous number satisfactorily. Personally, however, I hardly believe that a student can get the B.A. degree at Harvard on half an hour's study a day.

MR. HUFFCUT: I have been a little surprised by the remarks implying that this seems not to be a university question, that it is primarily a college question. Perhaps the speakers have been affiliated rather with college work than with the other university departments. It seems to me to be a question for every department of the university, except those requiring the A.B. degree as a prerequisite for admission. It certainly is not an easy problem for the professional schools to fix a system of examinations and insist upon those examinations for admission. In the first place, the professional school would have some difficulty often in determining upon what it should examine. As a matter of fact, every law school that does not require the A.B. degree for admission admits upon the certificate of secondary schools. What is to become of that problem in university administration, if admission upon examination is to obtain? Secondly, the professors in the professional schools are, for the most part, incapable of holding examinations in the subjects that would ordinarily be required, and we should either have to allow the college department to fix the requirements for admission to the professional school, or should have to make some arrangement with our colleges to fix additional examination-subjects which we may think better suited to the profession into which the student is going. I fear, however, that there would not be among the teachers in the professional schools any general agreement as to what the students should be examined upon.

MR. FISKE: The medical department of Columbia University has recently discontinued the system of admission by certificates, except in the case of at least one year's college work, requiring all other candidates to take examinations in a group of subjects selected by the medical faculty.

MR. HAUPT: The charter of Johns Hopkins University requires us to accept the graduation diploma of some college or to examine the applicant for admission. After fourteen years' experience I think the preferable method would be a general examination-system in

which the individual would be considered rather than the class. Our limited experience is certainly against the certificate method; diplomas mean such a great variety of things in different cases.

MR. FINE: The great point here is the interpretation of the question itself. If I were in the West, I have no doubt that I should be a strong advocate of the certificate system, and if an examination syndicate were possible, I am not at all sure that I should not vote in favor of it. The certificate plan in an eastern institution like Princeton would lead to almost no change, except possibly for the worse. A certain few large schools send us a considerable number of men, but in general our students come in twos and threes, and it would not do for us to make a distinction between the schools which send us large numbers of men and those sending us only two or three. Yet some system of separation would seem indispensable, if the certificate method is to accomplish its purpose practically.

I have heard this same question put to representatives of the New York schools, and in each instance the vote has been very strongly against the adoption of the certificate system. They maintain that the schoolmaster in the private school is put under a very unfair pressure, if it rests with him to say whether his boy shall be accredited or not. The college ought to take that responsibility. I should like very much to hear some argument for the certificate system by a representative of some of the eastern institutions in which the conditions are similar to those at Princeton.

MR. BIRGE: The University of Wisconsin's situation and practice are almost identical with those of California and Michigan. We have also the same system that prevails at Cornell, namely, the law school requires for admission the same preparation required for admission to the Freshman class in the college, and the student, as a rule, enters on certificate in the same way. If, however, students come to the law school for examination, they are turned over to the regular college professor, to be passed or not, the same as any other student. We find this difficulty: In the College of Letters and Science certain specific subjects in which the student presents himself at entrance are necessary if he is to go on with the work of the college. This is not so in the College of Law, and if an examination system were adopted this difference would, I think, make difficulties in the case of mature men who are now admitted without any specific entrance tests as special students, and who then wish to become regulars and take their degrees. Men of twenty-five and over do not find it easy to take examinations in elementary subjects like physical geography and geometry.

THE SECOND SESSION

THE REQUIREMENTS FOR ADMISSION TO PROFESSIONAL SCHOOLS

PAPER READ BY PRESIDENT ELIOT OF HARVARD UNIVERSITY

The subject assigned me, "The Requirements for Admission to Professional Schools," demands of me at once a definition of professional schools. If we look

back to the end of the eighteenth century, the American colleges may be said to have been preparing young men for only one profession, the ministry, and even for this profession they were giving hardly any instruction which could be called technical. Thus, at Harvard College candidates for the ministry merely remained one year or two years at the university after taking the Bachelor's degree in arts, and studied under direction of one or two professors. They usually had got their Greek and Hebrew in the college itself before taking the degree of Bachelor of Arts. This sort of preparation for the ministry was the only sort the great English universities supplied, and even to this day they make hardly any other contribution to the preparation of clergymen of the Established Church. All through their early history the American colleges were preparing a moderate number of men for the profession of teaching; but they confined themselves to giving candidates for the upper levels of that profession an elementary knowledge of Latin, Greek, and mathematics, with glimpses of philosophy and natural philosophy. Down to the middle of the nineteenth century there were only four professions which were called "learned," namely, those of the minister, lawyer, physician, and teacher. How is it today? The new professions outnumber the old. There are four distinct branches of engineering—so distinct as to make necessary special training for any one of them in addition to a broad training common to all; and each of these branches is in very truth a learned profession. The chemist has a profession to himself, namely, the application of chemical science to a great range of industries, including metallurgy. Then there are two artistic professions which now engage the services of many highly trained men, namely, architecture and landscape architecture. Here are seven professions, all of which may properly be called "learned," and my subject seems to cover them as well as the four older professions ordinarily called learned. Nevertheless, I propose to exclude all these scientific and artistic professions in my present consideration of the subject before us, and for this reason: The practice of all these professions is affected by the condition and prospects of the national productive industries. The older men here present have lived through several periods of industrial depression, during which members of the seven professions I have mentioned have had great difficulty in obtaining or holding appropriate employment. These periods of depression alternate with periods of undue activity, like that through which we have just passed. In the periods of excitement and sudden expansion there is a keen demand for new adventurers in the scientific and artistic professions, but when the period of depression comes the supply of young aspirants greatly exceeds the demand. These professions may be said to depend for their prosperity on the active utilization of capital in the country at large, and their members are individually much more dependent on this eager employment of capital than the members of the four professions called "learned." Those professions must keep in activity whether the country generally is industrially and commercially prosperous or not. Indeed, it happens that some

lawyers are better off in periods of depression than they are in periods of pervasive prosperity; and teachers, as a rule, are better off when prices are low and the national industries are producing more than the country itself can consume. Although, therefore, I regard these scientific and artistic professions as quite as much entitled to the characterization "learned" as the four older professions, I deliberately set them aside for the purposes of the present discussion. They are too new, too unsettled in their scope and methods, and too exposed to a periodic rise and fall. None of them could at this moment bear to have their standard of instruction raised abruptly and largely by demanding for admission to the schools of these professions a Bachelor's degree in science. The professions of architecture and landscape architecture may, perhaps, be exceptions to this remark. Aspirants to the high places of these artistic professions need a long and thorough training—a training which should include literature, history, and the fine arts in general, as well as an elaborate technical training in drawing, design, and composition. The schools of science and technology in our country are so new that they have hardly as yet worked out an undergraduate course of instruction for the first degree, and during periods of business activity the demand is so great for competent young men who have taken the very first degree in science that the young men rush into professional work instead of remaining in the schools to perfect themselves in the higher walks of their several professions. Let us return, then, to the four old professions called "learned," and let us inquire what ought to be the requirements for admission to schools for these professions.

Every question concerning the requirements for admission to an educational grade not the lowest immediately offers to the inquirer two sides: first, the requirements for admission to the upper grade have a strong effect upon the studies and the methods of the grade below; and, secondly, these requirements for admission affect profoundly the quality of the persons who are subjected to the instruction of the upper grade. Let me first speak of the effect upon the studies and the methods of the lower grade. If the universities of the United States should now declare that in 1906 or 1907 they proposed to demand for admission to their schools for the learned professions a degree in arts or science, the very first effect would be to increase greatly the number of pupils in the secondary schools of the United States. The prudent and foreseeing parents would say to themselves: "We want our boy to have at least a chance at some one of the learned professions. We must send him to a good secondary school, and so get him into college, or into a scientific school, where he can subsequently get his first degree in arts or science; otherwise he will be cut off from all the learned professions, and that cannot be thought of." Again, the colleges and scientific schools, after a lapse of a year or two, would find their numbers greatly increased for the same reason. Now, both these effects would be wonderfully beneficent in our country, and it is within the power of twenty or thirty colleges and universities to produce those two effects. The continental nations of Europe all

make, and have long made, analogous requirements for admission to the learned professions. They have for nearly one hundred years been reaping the advantages of these requirements in procuring the thorough education up to the age of nineteen or twenty years of a large proportion of their best population. The United States have lacked this inducement to thorough secondary and college training, and they will lack it so long as the schools for the learned professions are open to persons whose systematic education may have ceased when they were ten or twelve years old. I believe that it is high time that America made use of this powerful inducement to those of its children who are not born in poverty to attend good secondary schools and colleges. Great progress has already been made in restricting access to the professions, not by any effort of the universities, but by ministerial associations, bar associations, and societies of physicians, procuring defensive legislation against the entrance to these professions of incompetent persons. Many states now provide state examining boards for entrance to the professions of law and medicine; and many of the various religious denominations provide securities against the entrance into the sacred calling of incompetent and unprepared men. It is only in regard to the preparation of teachers—I, of course, refer only to teachers in the highest grades of the professions—that the universities have distinctly undertaken to demand a preliminary degree in arts or science before the higher school for teachers—often called the graduate school—can be entered. What the universities have done for the teacher's profession by instituting and developing their graduate schools I hold that they ought to do for the other three learned professions.

The first argument for requiring a preliminary degree in arts or science for admission to university professional schools is the widespread good effects which would be at once obtained throughout the secondary schools and colleges of the country. The second argument is to be found in the improvement which immediately results in the quality of the classes in the professional schools. In the Harvard Schools of Divinity, Law, and Medicine we have experience on this subject covering several years, and the unanimous opinion of the teachers in these schools is that the requirement of the first degree in arts or science for admission would be completely justified by the argument just adduced, if there were no other argument for the measure. There can be no question whatever about the great improvement in the instruction which becomes possible in a professional school so soon as it can be assumed that all the students in it are men who have had, not only the training of a good secondary school, but the added training of three or four years in a good college. The last demonstration we have obtained on this subject has been given in our Medical School. Our teachers of medicine have been accustomed for many years to a heterogeneous class. An entering class in medicine would contain some college graduates, some graduates of good secondary schools, and other students who could barely read and write. It is impossible to address well-directed instruc-

tion to students who differ so widely in mental quality and mental experience. The relief in our Medical School during the last two years has been inexpressible. The improvement of the instruction has been even greater than had been previously imagined as probable; and there is not a person connected with the school who would dream for a moment of proposing to go back to the method of admission by an elementary examination. Similar results would follow from this measure in every university in the country which should adopt it.

Let us now consider for a few moments the objections to this very desirable improvement. The first objection is the pecuniary one. The professional class of a university may be considerably diminished in numbers or size by such a revolution. This reduction did not take place in our School of Theology; but it did take place for a short time in our School of Law, and is now taking place in our School of Medicine. By the time four classes shall have entered the Medical School under the new requirement, the total number of students in the school will probably be reduced to two-thirds of what it was at its maximum just before the new requirement was imposed; but, according to all signs, this reduction will be made good within ten years from the start. Against this highly probable loss of tuition fees, even for a period of eight or ten years, it is possible to take precautions by laying up some money from the receipts of the school during the four or five years of notice that the new requirement is to be made, and also by raising money among the friends of the school expressly to meet this probable reduction of income during the period of transition. It is our experience at Cambridge that most members of the learned professions who are already at work in the world will not only cordially approve of the new requirement, but will contribute to guard their respective schools against pecuniary injury therefrom; feeling that their professions are to be advanced in merit and dignity, they will support in every way the effort of the faculty to bring about the improvement. But suppose there were a pecuniary loss for eight or ten years in consequence of the change proposed, it would still, in my judgment, be emphatically the duty of the universities to incur the loss, and render this great service to the country in spite of that loss. Secondly, it may be objected to this proposal that in our wide country, large portions of which are but sparsely inhabited, and have only very elementary schools imperfectly equipped, the professions ought to be opened to men of great natural ability who have never had the opportunity of acquiring even an elementary education. Geniuses arise here and there who ought not to be cut off by the poverty of their parents from the highest walks of life. Great names are cited in support of this objection. I reply, first, that the organized institutions of education are not planned for great geniuses. Great geniuses override them, run through them, run around them, and come to the top of society in spite of regulations wisely made for the advantage of the multitude, but inapplicable to geniuses. Secondly, a boy or young man of genius will, as a rule, find the means of vaulting over any fence or wall

which opposes his progress. If Abraham Lincoln had discovered that he could not enter the profession of the law without obtaining the degree of Bachelor of Arts, he would have set himself to work to get that degree; and we may all be perfectly certain that he would have found the road to it. The remarkable person sometimes finds unusual means of making a short-cut to his object; but when he finds himself obliged to travel a well-marked road, he travels that road with a stride that completely distances the multitude. If the interests of the great body of American youth can be promoted by any strict adherence to educational paths, we need not trouble ourselves at all about the geniuses; in earlier times, before any such regulations were made or paths marked out, they reached their goal. In his day George Washington did not need a systematic education to make him a sufficiently competent surveyor and a successful commander of militia. If he had needed a systematic education to arrive at either of these ends, and the education was within his range of vision, we may be perfectly sure that he would have got it. In laying out or planning the educational system of a multitudinous people it is unwise, in my judgment, to consider much the imposing but rare exceptions, and particularly the very few persons of extraordinary intellectual and moral qualities. Those are the very youths who will be perfectly sure to take care of themselves.

The faculties and governing boards of Harvard University entered deliberately on the transformation of their professional schools for theology, law, and medicine which is involved in the requiring of a degree in arts or sciences for admission to these schools. They already see admirable results reached in the schools for ministers and lawyers, and they feel the highest confidence in getting a similar outcome in the School of Medicine. Since the Medical School took this resolution and acted upon it, its endowment has been trebled, so strong is the belief of the public-spirited and intelligent givers to education in the need of physicians and surgeons who have received the highest training which the modern world can give them. I desire to report to this meeting that the experiment entered upon by Harvard University has been thus far absolutely successful, and gives promise, not only of bringing about a great improvement in professional education, but also of recruiting Harvard College and the Lawrence Scientific School better from the secondary schools. To win success under this same policy in all the universities here represented, and particularly in all the state universities, whether represented here or not, is to my thinking simply a question of resolving to run all the risks and to bear all the losses for the sake of doing great and far-reaching service to the whole people.

REQUIREMENTS FOR ADMISSION TO PROFESSIONAL SCHOOLS

PAPER READ BY ERNEST W. HUFFCUT, OF CORNELL UNIVERSITY

The modern American university includes among its professional schools not only the older schools of theology, law, and medicine, but also some or all of the

newer schools of pedagogy, veterinary medicine, agriculture, forestry, industrial or engineering chemistry, architecture, and engineering in all its branches—civil, mining, mechanical, and electrical. Some of these, indeed, are not always organized into separate schools, and are often disguised as departments of the college of arts and sciences; but devoted as they are to the training of men for professional work, they properly belong under the classification of professional schools, however they may chance to be named or administered. I take it that the college is the part of the university in which the discipline and culture of men is the main object, while the professional school is a department in which men are trained in the science, art, and technique of a definite calling. Tested by this distinction, much that now passes in our universities as college work—and particularly scientific work—might properly be classified as professional work. Eventually we may need either to make this distinction clearer by separating all professional departments from the college, or to obliterate it altogether by organizing all the work of the university into one harmonious system, under one university faculty, much as the scheme has already been worked out at one of our youngest universities.

In considering the question before us, we need, therefore, to bear in mind the greatly enlarged meaning that must now be attached to the term "professional school." Yet for the purposes of this discussion I shall limit my remarks and illustrations to medical schools and law schools. Aside from theological schools, these are the oldest and most numerous of all the professional schools and have in attendance more students than all other professional schools combined. In 1900-1901 there were 154 medical schools with an attendance of nearly 27,000 students, and 100 law schools with an attendance of nearly 14,000 students. Moreover, the increase in attendance at these schools has been most extraordinary, amounting to an increase of 73 per cent. in medicine and 202 per cent. in law from 1890 to 1901, and of 120 per cent. in medicine and 335 per cent. in law since 1880. Because of the age and the recent rapid development of these schools, the question of the requirements for admission to them has been more definite and more pressing than in the case of other professional schools and departments.

Of the 40,000 students in attendance upon these schools probably about 5,000 hold the A.B. degree or its equivalent. The remaining 35,000 have a varied preparation, ranging from the grammar school to the high school and the earlier years of the college. Perhaps it is fair to assume that the majority of them have an average high-school education. The Association of American Law Schools requires that its members should exact as a minimum a high-school education, and the 37 schools in this Association have an enrolment of over 8,000 students. Statistics gathered last spring show that of 98 law schools, whose catalogues were examined, 43 have practically no entrance requirements; 4 have requirements below those of high-school graduation; 44 have a high-school standard; 3 have a standard equal to the first two

years of the college course; and 4 normally require a college degree as a prerequisite to granting the degree in law.¹ I am unable to give the corresponding figures for the medical schools.

Two different standards for admission to professional schools seem practicable as tests that may be readily applied by administrative officers. The first is the high-school certificate and the second the college diploma. In time these lie four years apart, and this wide variance in the time element raises the important question now under discussion. Some schools, indeed, have compromised the difference by fixing upon a middle point between the extremes, but the very grave difficulties in the way of administering this standard under our present educational system will probably deter most schools from following their example. At least one university (Stanford) has solved the problem by obliterating the distinction between the college and the professional schools, and allowing a system of free electives among departments after one year or more of undergraduate study in the more distinctively college subjects; but most of our universities are not so organized as to make this plan a practicable one. Assuming, then, that the choice must be either the high-school standard or the college standard, we have to examine the merits of each.

The first striking feature of the situation is that, while there has been a marked increase in the number of students in attendance upon the professional schools, and an absolute increase in the number holding a college degree, there has been no marked increase in the percentage of those possessing college degrees. Twenty years ago 8 per cent. of the medical students (953 out of 11,929) were reported by the Commissioner of Education as having college degrees; in 1901 about 9 per cent. (2,473 out of 26,757) were so reported. In 1880 about 24 per cent. of the law students (758 out of 3,134) were reported as having college degrees; in 1901 about 15½ per cent. (2,119 out of 13,642) were so reported. It is probable that these returns are not complete, and it is certain that some schools having a considerable number of college graduates have not always reported them, but these statistics are the only ones available, and, covering as they do a long series of years, may be taken as approximately correct. They show that, while there have been slight variations in the percentage of college graduates in the medical schools, and that they have never numbered as many as one-tenth of the whole, there has been a sharp decline in the percentage of college graduates in the law schools, ranging from 24 per cent. in 1880, 22 per cent. in 1890, and 17 per cent. in 1900, to 15½ per cent. in 1901.

To what are we to attribute this result? With the increase in the number of students in our colleges and in the number of college degrees conferred (4,969 academic degrees in 1880 and 8,000 in 1900), it might be expected that a larger

¹ "A Decade of Progress in Legal Education," address by ERNEST W. HUFFCUT, as chairman of the Section of Legal Education of the American Bar Association, printed in the *Proceedings of the American Bar Association* for 1902, pp. 529-44.

proportion of those in the professional schools would be college graduates. Yet such is not the case, and we must seek the cause, I think, in two striking characteristics of our educational development: first, the advanced age at which men now graduate from college; and, second, the marked increase in the length of the professional courses.

From 1887 to 1897 the average age of Freshmen entering Harvard College was annually over 19 years, the lowest average being 19 years and a fraction of a month in 1895, and the highest 19 years $7\frac{1}{2}$ months in 1889. In 1900 the average age was a fraction of a month under 19 years. These men are therefore upward of 23 years of age when they take their college degree. The average age of men entering the College of Arts and Sciences at Cornell University, as given for the years 1895-96, 1896-97, and 1897-98 was 19 years $3\frac{1}{2}$ months, 19 years $4\frac{1}{2}$ months, and 19 years $6\frac{1}{2}$ months, respectively, while the median age was in each year 19 or over. The average age of these men at graduation would therefore be over 23.

Compare these figures with the age at which professional men now in high station graduated from college. Of the present members of the Supreme Court of the United States but one graduated from college after he was twenty-one and two graduated at seventeen. Of all those who have been appointed to that bench since 1850 but three graduated from college after they were twenty-one, and one-half of those who were college graduates took their degrees before they were twenty. Of the living ex-attorneys-general of the United States every one who is a college graduate took his degree before he was twenty-one. Of the ten living ex-presidents of the American Bar Association all but one of those who are college graduates took their degrees before they were twenty-two and five before they were twenty-one. These instances serve to emphasize, what is, I presume, generally conceded, that down to a comparatively recent time students graduated from college from two to four years earlier in life than at present, and had completed their professional studies at an age when the college graduate of today is just beginning his.

The lengthening of the period of professional studies has been the chief characteristic of professional education during the past ten or twenty years. In 1885 there was not a medical school with a four-year course and but five with a three-year course. Of the 11,059 students in medical schools in that year all but 757 were in two-year courses. Twelve years later 99 schools out of 150 required a four-year course, and over 67 per cent. of the medical students were in these schools. In 1900-1901, 148 schools out of 154 required a four-year course, and over 98 per cent. of the medical students were in those schools. Practically every medical student must therefore now spend four years in professional study, whereas fifteen years ago practically every student spent but two years in professional study. In 1885 there were but 5 law schools having three-year courses, and these enrolled about 20 per cent. of the law-school students. In 1900-1901 there were 54 law schools having a

three-year course, and these enrolled over 68 per cent. of the law students. The Association of American Law Schools, founded in 1900, will require all of its members to have a three-year course beginning with 1905, and after that date probably 90 per cent. of the law students will be in three-year courses.

The total result, therefore, is that men pursuing both a college and professional course may now expect on the average to take their A.B. degree at twenty-three, their medical degree at twenty-seven, and their law degree at twenty-six. Medical practitioners must expect to spend eight years at the university, and legal practitioners seven. At some universities which permit professional work to count toward the A.B. degree this time may be shortened by one year. But under the most favorable arrangement men taking both degrees enter upon their professional careers from four to six years later in life than the college and professional men of a generation ago. In some quarters there is a movement toward shortening the college course for the benefit of students fitting for professional schools, but this involves a totally different question from the one now under consideration and concerns primarily those in charge of college work. We can hardly pursue this discussion profitably if required to presuppose a change in college work which is as yet merely a suggested change strongly opposed by the majority of educators, and which, if ever accomplished, will come at some indefinite future time.

Taking, then, the educational system as we now find it, with the increased requirements for admission to the college and the increased length of the professional course, ought the professional schools to insist upon the college degree as the normal standard for admission? Is the outlay of time and money a possible one for the average American youth, and if a possible is it a profitable one? If our educational scheme results in shutting the door of opportunity to the struggling and ambitious poor, it is undemocratic. If it results in exacting more in life-years than is necessary and expedient for professional efficiency, it is wasteful and extravagant, depriving the individual of his just opportunities and society of its recompensatory service.

We come, then, to the inquiry whether, viewed from the standpoint of professional efficiency, any greater preparation for professional study is necessary than that which can be furnished by the public and private preparatory schools.

We observe that boys now enter college at about the age at which their fathers graduated from college. I do not know whether the boy of today has at the close of his preparatory-school education the equivalent of the A.B. degree of forty or fifty years ago. He has at least spent as much time in study. Whether he has spent it as profitably I leave for those in touch with our secondary schools to answer. At all events he ought to be as well prepared at nineteen or twenty as his father was at the same age. If he is not, the remedy lies in improving the methods and ideals of secondary education, and not in forcing the boy to the expenditure of additional time.

We observe that the professional men now eminent and successful began their professional studies at nineteen or twenty, and were engaged in professional work at twenty-one or -two. If we add the one or two years due to the lengthening of the professional course, the boy of today, by beginning his professional studies at nineteen or twenty, may hope to be in professional work at from twenty-two to twenty-four. It is fair to presume that he is, or may be, as well prepared at nineteen or twenty as those of the preceding generation, and that with the longer and more systematic professional study now required he will enter his profession better equipped than were the physicians and lawyers of a generation ago.

In determining the requirements for admission to professional schools we must not make the mistake of fixing upon the highest possible preparation irrespective of other considerations. The problem is to fix upon the minimum preparation that is adequate for the average youth, and leave to voluntary choice, guided by intelligent advice, the acquisition of more. All that we have a right to exact is such a minimum as measures the development and discipline fairly necessary for the profitable pursuit of professional studies. I presume it would be conceded that holders of the A.B. degree are better prepared than high-school graduates; but then in turn the holders of the Ph.D. degree would be better prepared than the college graduate. By "better prepared" I mean that the man who is four years older and has spent those four years in study ought on the average to perform more easily and readily any intellectual labor than the younger man, or that the man who is yet three years older and has spent those three years in study ought to have a like advantage over the college graduate. But the man of action cannot be forever in the schools. Somewhere he must stop and say: The time fairly allotted to scholastic preparation is past; the time for active work begins.

While the average standing of college graduates in professional studies ought, therefore, to be better than that of high-school graduates, is it true that the standing of high-school graduates is unsatisfactory? I think there is no evidence to that effect. Moreover, such evidence as we have leads to the conclusion that the difference between the standing of college graduates and high-school graduates is not so great as might be supposed. The only statistics I have seen upon this point are furnished by the Law School of the University of Pennsylvania. It appears that in that school during a year in which 43 per cent. of the students were college graduates and 28 per cent. high-school graduates (the rest being otherwise classified) the college graduates attained an average standing of 77.41 per cent. out of a possible 100 per cent., and high-school graduates an average of 74.30 per cent., while the graduates of the Central High School of Philadelphia, taken as a separate class, attained an average of over 77.65 per cent., or slightly more than the college graduates. In other words, college graduates had about three points the better of high-school graduates in general, but fell a fraction of a point below the graduates of a

particular high school which does work equivalent, I understand, to at least one year of college work, and which furnished a considerable portion of the high-school men. Taking the graduates of four leading universities as a group, they average 80.30 per cent.—still only about three points better than the graduates of the selected high school. What is really significant in these figures, however, is the fact that, taking all of the high-school graduates together, their standing (74.30 per cent.) is certainly creditable and discloses no evidence of any general inability to pursue advantageously professional studies. I may add, for what it is worth, my own experience, to the effect that high-school graduates, while not on the average equal to college graduates or to juniors and seniors in arts who elect law, display nevertheless an average capacity fairly equal to the demands of professional studies. It is true that the greater part of the prizes and honors will go to the college graduates, who with their greater maturity and discipline will have a decided advantage in an intellectual contest. It is also true that a larger proportion of the high-school graduates will fail wholly or partially in professional studies, because the college graduates consist of men who have already passed through the selective processes of university exactions. But neither of these circumstances seems to me to argue that the high-school graduate is unfitted for professional work, but merely that the college graduate, because of added maturity and discipline, is better fitted. Whether the college graduate has not lost something of zeal and adaptability possessed by his younger competitor I do not pause to consider, but I venture to think that in the senior year of a professional school the man of twenty-two or twenty-three with a high-school education will still be pursuing with zest studies which have begun to pall upon the man of twenty-six or twenty-seven, who is then in his seventh or eighth year of university residence. It is quite possible to keep a man so long in preparation that an early zeal is transformed into a late indifference.

In the argument in favor of requiring the A.B. degree as a preparation for professional study there lurk two ideas which, I feel sure, ought to be brought clearly to the light and carefully examined. The first is that by requiring the A.B. degree we should enlarge the general culture of those engaging in professional work and at the same time subserve the interests of liberal education. But is it the mission of the professional school to force upon professional men a liberal education for its own sake? If they miss it, the loss is not in professional efficiency, but in personal culture and all the pleasure such culture affords. I cannot feel that the professional schools have a right to go one whit beyond the preliminary training necessary for the proper conduct of their own work, or to undertake to examine beyond that point into the general tastes and culture of their students. Then as to the encouragement of liberal education—that is, of the work of the college—it is open to question whether the insistence by professional schools upon the A.B. degree might not tend to shorten the time and narrow the scope of liberal culture, or the opportunities for

liberal culture, in general. To force into the college the fifty thousand professional students (mostly men) who now have no degree would nearly double the number of men now in liberal-culture courses. The practical and specific outlook of these men, the demand for adjustments to their needs, the pressure for their earlier entrance upon professional work, could not but profoundly influence the character, and probably the extent, of the college work. The college of liberal arts cannot be made the necessary preparatory school for fifty or sixty thousand professional students without raising at once the inquiry whether it should adapt itself mainly to the needs of these men or continue, as heretofore, to be the congenial home of a liberal culture that takes a minimum account of the practical utilities of life.

The second idea which sometimes lurks in the argument in favor of the A.B. degree is that the professional schools might, by adopting it as a requirement for admission, cut down the number of those pursuing professional studies, and thus relieve the already overcrowded professions. But it is not the mission of the professional schools to keep men out of the professions, but to help properly equipped men into them. Unless it can be shown that the high-school graduate is unfit on the average to pursue professional studies and practice his chosen profession, the denial of the privilege would be a cruel injustice to him and a wrong to society. There must be no aristocracy in education, and no artificial or unnecessary barriers between the youth and the realization of his ambitions. To deny professional opportunity to those lacking the A.B. degree merely to keep down the number of practitioners would be to give an undue advantage to the wealthy and to create a professional aristocracy out of touch with our democratic ideals. To offer professional opportunity to all graduates of our public schools would be to subserve our democratic ideals without injury to professional efficiency. Free opportunity for the competent, and free competition among all, should be the maxims of professional education and professional practice.

When it is considered that a very large part of the practitioners in law or in medicine, or in any other profession, must of necessity serve small or poor communities, and can never hope for large financial returns, there can be no justification in compelling them to spend more time or money in preparation than is fairly necessary for good professional service. Huxley stated the whole matter pithily and convincingly when ten years ago he wrote as follows to Professor Ray Lankester:

The problem of the medical university is to make an average man into a good practical doctor before he is twenty-two, and with not more expense than can be afforded by the class from which doctors are recruited, or than will be rewarded by the prospect of an income of £400 to £500 a year. It is not right to sacrifice such men, and the public on whom they practice, for the prospect of making 1 per cent. of medical students into men of science.

These are the words of wisdom and experience. In law or medicine our requirements must not be so high as to keep the average man in process of preparation

beyond the age of twenty-two or twenty-three. They must be high enough to guarantee to the public efficient general practitioners. Specialists will need and take more time. Those seeking general culture as well as professional efficiency will take the time necessary to secure both. But the average general practitioners and the public they serve must not be sacrificed to either class. Individual schools, indeed, for reasons bred of their peculiar problems or purposes, may raise the standard of admission as high as the A.B. degree without detriment to the opportunities still open to those who from choice or necessity seek the shorter cut. But for all schools to do this would be to exact three or four years of time out of the life of every practitioner, with no corresponding increase in professional equipment. For even the majority of the university schools to do so would be to narrow unduly the opportunities open to those who, with adequate preliminary education, are seeking the best possible professional instruction. Least of all can those schools justly do so which owe their existence or support to the grant of public money, and which are under bonds to serve impartially all classes of the community.

DISCUSSION OF THE REQUIREMENTS FOR ADMISSION TO PROFESSIONAL SCHOOLS

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HADLEY: It has seemed to me that relatively little was said in either of these papers with regard to the effect of the requirement of the degree on the college course itself. The American college has for a long time performed a fairly well defined service. I think there can be no doubt that it has helped to create an intellectual atmosphere—liberal, unselfish, public-spirited in the best sense. It has made the conception of the educated man in the community. What will be the effect on the college course if we require the degree of B.A. for entrance into the professional schools? I think there is less evidence than Mr. Huffcut supposes that the age of college graduates has increased. We supposed that it had at Yale until we looked up the matter statistically. We went as far back as the records carried us, namely, to 1863, and we found that the age of graduation from the college was remarkably constant. The man who collected the statistics said he was going to collect them to show the steady increase in the age of graduation, and he was as dumbfounded as anybody else to find that they did not show it.

We, therefore, are not dealing with an encroachment of the college course on the period of active life. If we are going to shorten the college course in any way by the requirements of a professional degree, are we going to take something out of it? and is it desirable that such an effect should come about? I think the indications are that it will be the effect. The movement at Harvard and Columbia for the requirement of a professional degree has been coincident with pressure toward shortening the college course. In fact, taking as a standard the degrees of many of the colleges whose bachelorship would be accepted as a basis of admission to the professional schools, some of the older colleges would find most plausible

ground for giving after two years a degree which would admit their own men into the professional schools. What is the effect on the other men who are not going into professional schools? To anyone who knows the influences leading such men into business, and the break in the college associations after the bulk of a man's classmates go away, the argument that they can stay on and take one or two years' work more for mastership loses much of its force. The question as to whether the men are now so much better prepared in the elementary schools that though going away at a younger time they are as well educated as they were before, I shall not attempt to discuss. Our experience, however, is that the teaching of pseudo-sciences at many schools has lessened rather than increased the capacity of the students for work; that, having become accustomed to education on things attractive, it becomes less possible for them to accomplish the removal of a real obstacle.

Unless something very great is to be gained for the professions and the professional schools by the change, I believe that the danger to the college course from the requirement of the A.B. degree as a sort of certificate for entrance to the professional schools is sufficiently great to be a serious drawback against the scheme; that the large percentage of our college graduates who do not go into the professions would feel the change seriously.

Four hundred years ago the German universities were face to face with exactly this problem: Should the degree in arts be required as a preliminary for the study of law, medicine, or theology? The history of the movement is obscure, but the fact remains that, while there was in the latter part of the fifteenth century a strong tendency to require the degree in arts as a preliminary, for one reason or another it did not prove salutary in the connection between the professional schools and the secondary schools direct. Now the circumstances are so different that this does not prove so much. Yet where we know so little about the pupil one piece of authentic history is a matter of a great deal of importance.

MR. ELIOT: Mr. President, your last remark seems to me to be a very instructive one. There is no such thing as the degree of B.A. in Germany now, and there has not been for centuries, and there is no such thing as an American college in Germany; it has disappeared absolutely. To my mind that is exactly what will happen in this country unless the universities require the degree of B.A. for admission to their professional schools. The college will disappear between the secondary schools, improved, on the one hand, and the professional schools on the other. And that is why I advocate, in the first place, the requirement of the B.A. degree in the university professional schools—not in others—and why I believe in the shortening of the college course in this country.

The second paper pointed out that the period of professional study has lengthened. That has been perfectly inevitable, because we have learned in this country that the professions—learned, scientific, and artistic—control this country completely—its politics, its commerce, everything. Unless the universities turn out the best-trained men possible for these professions, the universities are not going to hold the position in this country that they ought to hold. Can there be any doubt that a man who has first been to a secondary school up to his eighteenth year, and then gone to a college for three years more, getting the degree of B.A. at twenty-one, and then goes through professional training for four or five years, will come out at twenty-five or twenty-six a better trained man than a man who goes through a high school or an academy up to his eighteenth year and then goes into the professional

school? or that the university professional school which takes in only men who have gone first to the high school and then to college will be a better professional school than one taking in graduates of the secondary schools?

If we are in doubt as to whether a three-years' training or a four-years' training in an American college will produce a man better competent to receive professional training than the man who has not been through a college, then I say that that in itself is proof that the college is failing to perform a useful function, and the sooner we throw over the American college the better.

I believe just the other thing, that the American college does perform a very useful function; that it is the educational institution in this country which is best worth preserving in the public interest. Look at the experience of Europe. What nation on continental Europe has what we call the American college? And how did they lose it? They lost it by asking only a secondary-school training for admission to professional schools. That is the way we shall lose it if we are going to lose it. I believe that there will always be professional schools in this country open to anybody in the street who wants to walk in. They perform a useful function, but an inferior function; and I venture to say that any American university now in existence which does not require the college degree for admission to its professional schools will in fifty years find itself inferior to those universities which do require it.

I do not know any more comprehensive subject than the one which we now have before us, because it touches this question of age, the most difficult point in American education. It is perfectly unreasonable that in this new country a young man should find himself unable to practice law or medicine or be well prepared as a teacher before he is twenty-seven or twenty-eight years of age. At Harvard we have been contending against this unreasonable condition, in the first place by working steadily for twenty years in improving the elementary and secondary schools. There is a horrid waste of time somewhere between the age of ten and eighteen years of all American youth. I am happy to say that we have succeeded in getting back into the schools that send us pupils a considerable number of subjects that we teach at Harvard, notably English, the elementary sciences, French, and German. This I believe to be a necessary operation all over our country. And we have succeeded in doing another thing which I know cannot be brought home to American educators in less than ten or fifteen years—getting precisely the same amount of work which used to be done in four years at Harvard done in three years by two-fifths of the men. It has been a very slow process. We hope, therefore, to begin soon to graduate at Harvard College very well-trained men, not at twenty-three, but at twenty-one years of age, with ample time for the four or five years that will be needed for the best possible training in the professions. It is already apparent that the best training for some of the new professions takes more time than the training for the old. The training of a competent engineer, for instance, whether mechanical, civil, electrical, or mining, and especially of an architect, takes more time than the training of a lawyer. We are, therefore, not yet at the end of this expansion of professional training.

I do not know how many universities have the kind of vital statistics which we have at Harvard—the record, for many classes, of marriages and births. I do not know anything more disheartening than these records, or which exposes more completely the unwisdom of the "layout," if I may use that term, of American education during the last forty years. The Harvard

classes do not reproduce themselves, and I believe the same to be the case with educated Americans in general. I took six classes about twenty-five years out of college, and they lacked 28 per cent. of having as many sons as they themselves numbered when they graduated. This question of the age at which men can get to work in the world affects directly the reproductive power of the best element in our population, and we must find a remedy for the present state of things.

MR. BARKER: I should like to say a word about the attitude of the University of Chicago toward this subject, especially since many of the practical difficulties which we meet with in admission to the professional schools do not appear to have been touched upon. In the first place, the subject of admission to professional schools cannot be taken up without a consideration of the grade of professional school into which the student is to be admitted. I shall speak only with reference to the department with which I am acquainted, medicine, though I have no doubt that what I shall say is pertinent to law and theology also.

In 1895 not a medical school in this country required a qualification equal to that of admission to the Freshman class in any first-class college. Now we have four schools that demand an equivalent to admission to the Senior class in any college. No school demands less than a high-school diploma, and we have various gradations between these two levels. I think it would be little short of criminal to ask for a college degree for admission to the majority of medical schools, for most of them are not even co-ordinate in their facilities, in their teaching staff, with the high schools. Only a few are co-ordinate with the college, possibly six or eight with the upper half of the college. In my opinion not a single medical university school exists as yet in America. It seems to me very important to decide how the professional school is to be looked upon in relation to the college and the university. A university professional school should be co-ordinate with the university work and not with the college work. Its staff should be composed largely of university men, specially trained in their subjects, who give their whole time and energies to them; who are capable, not only of teaching knowledge that has been gained, but of contributing to the advance of knowledge. Men engaged in private practice are not able to give the time and energy to the university chair required in a university medical school. The practitioner has a place in the university medical school, but along with him, even in the clinical chair, there should be men who give their whole time and their whole energy to the university work; men whose practice is in the university's hospital only; and if they do see patients outside in consultation, they should be paid so well by the university that the consultation-fee goes to the university budget and not into their own pockets. If that arrangement were made, there would be little danger of the consultant giving too much time to outside work. No such school exists in America today, and it seems to me that this Association could not do better than to plan such university professional schools and to decide what is the best admission requirement to them.

What I shall say now pertains to admission to the semi-university schools which now exist. Even in Germany, where perhaps the best work has been done, medical educators are unfortunately not a unit as to what is desirable in preliminary education and qualification. Even those who for a long time urged large quantities of Greek later asked for more conic sections; and one teacher complained that the men who came to him with the classical education of one system were utterly unable to distinguish color, form, and constitu-

tion—were unable to reason clearly and to make proper inferences, and had not sufficient training of the imagination.

Thirdly, if we require a college education for admission, there is no unit as yet in college education in this country. The B.A. degree is not an even qualification; I do not agree, however, with those who say there is no way of getting any uniformity except by taking the high-school diploma or the college degree. I think it is quite possible to get a much more even preliminary qualification. Medical educators would all say that, in the first place, a liberal general education is necessary and desirable—not simply for culture, but really to increase professional efficiency. The level of general education has risen very fast in this country in the last twenty years, and we meet in our patients an entirely different degree of intelligence than formerly. The physician or the lawyer who can understand without being told is the one who succeeds. And how can a man do this if he is not liberally educated, if he has not had experience in life, if he is not acquainted with that literature which is the interpretation of life? Of course, there will be great differences of opinion as to what is meant by a liberal education, and I do not at all agree with those who maintain that it corresponds to the present college degree.

The second qualification for entrance upon the best study of medicine is a certain plasticity and youthful enthusiasm. A student must not be too old when he enters the medical school. The average graduate from college is now twenty-two or twenty-three years of age. The man who enters upon the study of medicine should not be over twenty, or at most twenty-one. We must get the preliminary qualifications of the medical student associated with him before he is that age. I have had personal experience in a school that demands the college degree and in a school which takes students who have a much lower qualification, and I was very much struck with the difference between the students. The older students have lost a great deal of their plasticity and enthusiasm. They have been lectured to death; they are bored by lectures, and men who have had their instruction largely by lectures want to get a short cut to everything, and are incapable of properly entering into laboratory work.

Another necessary qualification is instruction in certain specific branches absolutely necessary for the study of anatomy, physiology, and biology—the fundamental sciences in medicine, which presuppose a thorough training in physics and chemistry; in the principles of mechanics, optics, and acoustics; in organic, and especially in physical, chemistry. And to understand physics and chemistry one must have gone at least as far as the calculus in his mathematics. Again, he must be able to use the English tongue well, and read French and German. Now, if a student comes to the study of medicine without a knowledge of French, German, chemistry, physics, and biology, how can he meet the modern requirements, or profit by instruction demanding a knowledge of these subjects? A student so handicapped has no right to enter the modern medical school.

A man must, then, have a liberal education; he must not be over twenty-one years of age, and he must have been trained in these preliminary subjects. One attempt to meet these necessary requirements has been to make the college degree essential—a noble attempt that has done more than perhaps any other one thing to raise the standard of medical education and to improve the quality of the medical schools in this country. Another has been to give

those who had the college degree one year advanced standing in the medical school. I must say from practical experience that that has done a vast deal of harm in medical education in this country, because these students get a year's advanced standing without having done any medical work. They have, therefore, to do in three years the work of four, and very often turn out worse students than those entering with a high-school diploma. Another method has been to take these students with a high-school diploma and, lengthening the course to say six or seven years, to introduce into the medical course the subjects preliminary to medicine essential for its study.

The University of Chicago has at present resorted to this method: We demand that every student entering the medical school after next year shall have had at least two years of college work, including English history, the history of thought, mathematics, physics, chemistry, and biology, and a reading knowledge of French and German. After two years' work in a medical school, where the subjects are on a university basis, represented by university professors, we give him his college degree of B.A. or B.S. as the case may be.

I should not be surprised if, with the improvement in the work of the primary school and the high school, students ultimately entered college a year earlier than they do now, with a year's more power and information, and then at the end of two years, or at the most three years, in the college, they were given the B.A. degree. When that comes I see no objection whatever to the requirement of the college degree from every student who enters the professional school, provided the degree include that special training in physics, biology, French, and German so essential to the study of medicine. Of course, that would mean that men would have to know from the time they entered college that they were going into medicine.

I hope that this Association of American Universities will use its influence to establish university medical schools and to keep the requirements high. The universities need not look out for the supply of poor and mediocre practitioners.

DR. STARR: It seems to me, as it does to Mr. Eliot, that if there is or has been any aristocracy in this country, it has always been, and I hope it always will be, the aristocracy of learning. If we set a high standard, we shall work the country up to the appreciation of high standards, and so help on education in general and professional education in particular.

Our experience in the medical school of Columbia University has been, I think, instructive. We have now about 750 students, making the largest medical school in the country after the University of Chicago. Of that number 35 per cent. are college graduates. In 1880 the percentage was about 16, so that in Columbia University the percentage of college graduates has actually doubled. It does not seem to me that the present condition of our college—or, for that matter, of any college excepting Harvard and Johns Hopkins—is actually satisfactory. Last year we made an investigation under our own initiative. The New York Regent's examination for entrance to the study of medicine requires forty-eight "counts" of a high-school course. We found that of the men then coming to us, presenting those counts, 22 per cent. came in under conditions; they were passed by the Regents with thirty-six out of the forty-eight counts. The twelve counts they made up in an indifferent kind of way, and the result was a very poor set of men. This year we permitted no man to enter without the full forty-eight counts, and our class fell from 274 to 203, which shows what a small advance in the standard will do as to numbers.

We do not feel that that standard is high enough yet. We have already announced a preliminary examination other than the state requirement, and the question is what it shall amount to. I think the high-school examination is too low. On the other hand, a college degree, while it is the thing we ought to work up to, is not quite feasible in the present conditions in an unendowed institution. This is a matter of practical importance. We cannot at the College of Physicians and Surgeons give a medical education without the expenditure of \$175,000 a year, and we cannot get that in fees. The best way is, I think, to take the half-way course and demand the equivalent of a two-years' course in college. That is the idea of President Butler, and after all Harvard is only one year in advance.

One feature of the medical preparation has not been brought up—men who go into medicine cannot be satisfied with the course afforded by the universities. Out of a hundred and forty graduates last year eighty men felt the need of going into a hospital for two years of actual hospital work to complete their medical education. Half of these will make every effort to go to Germany for another year, where they will get more than the equivalent of what it cost them. To my mind all these are absolutely essential: four years in the medical college, two years in the hospital, and a year in the German clinic. The course, therefore, stretches over seven years instead of only four, and if we demand a degree which shall not be reached until a man is twenty-three—the age stated by the representative of Cornell—he cannot begin to practice his profession until he is thirty. I do not think, however, that it is at all proper to contrast previous generations with the present. People are more intelligent today; they require a higher type of men—better lawyers, better clergymen (and they are going away from the churches today because they do not get them), and better doctors; and, if they do not get them at home, they come to New York, or to Boston, or to Baltimore, or to Philadelphia for their physicians.

We have to set a very high standard, perhaps not as good as we should like, but still better than the high-school standard.

MR. KIRCHWEY: I think I have detected one or two fallacies in the statistics presented by Mr. Huffcut. How fairly representative is the "average age" of the actual age of the student in the college? One man forty or fifty years old in a class will raise the average enormously.

It is not true that the ordinary student is nineteen or twenty years of age when he enters college. He is seventeen or eighteen—just about the age at which we would fain have him.

Has not the period of apprenticeship been shortened rather than lengthened as a result of the institution of law schools and medical schools that really prepare men for their careers in life? I doubt very much if the normal graduate of the law school where I first taught, which had a complete course of eight months, was a year or two years after graduation any farther along on the road toward success than the student in the Harvard Law School is today at the end of his second year. I believe that the period of apprenticeship has really been shortened and not lengthened by the increased efficiency of professional instruction.

[In dissenting from Mr. Huffcut's conclusions as to the desirability of a preliminary college training for a student of law, especially as regards the efficiency of the college graduate, Mr. Kirchwey called attention to the statement made by him in his report for 1902, as Dean of

the School of Law, to the president of Columbia University (*Columbia University Annual Reports*, 1902, pp. 122-30).]

The work of the university professional school is not to deal in averages, nor to lift the poorest man out of the mire, but to lift the best men to the highest possible point of attainment. We are doing our work, it seems to me, if we are turning out a highly finished product, even if that product is small in quantity.

As to the effect upon the college itself of the requirement of its degree for admission to the professional school I feel with Mr. Eliot that the college is more likely to disappear by being made unnecessary than by being made more necessary than it now is. The college may however, be affected, and not improperly, by the contemplated change. The law school, like the medical school, should demand a college graduate whose work has been shaped with definite reference to that school. I believe, too, the result will be ultimately to cut down the four years now spent in college study.

The real question — which I am not competent to answer — is whether, after all, these changes be inevitable, or whether we are directly bringing them about by raising the standard of admission to the professional school; whether they do not involve more of benefit to the American university, and perhaps to the college, which we all love and cherish, than of detriment.

MR. LEUSCHNER : At the University of California our answer to the question whether it is desirable that students have some collegiate training before entering the professional school proper is a decided *Yes*. We have considered whether the course should be in the line of the professional course to follow, or any college course, say a strictly classical one, and under present conditions, as a matter of expediency, we feel that it should be exactly such as has been presented here by Mr. Barker. We hold that the length and character of the undergraduate course depend upon the professional course to follow, and that the bachelor's degree should only be given for a course equivalent to the standard four years' undergraduate course, whether completed in four years or three. We believe that the American college should be preserved, and we have tried to shape our preparation for the medical school so as to avoid injury to those students who do not go on into the professional schools.

The total time thus devoted by a student to the medical course is from six to seven years; to the law course, six years. We give the bachelor's degree at the end of the first four years so that a student may be free to change to some other university to finish his professional course. We really have three periods of two years. The first two are similar to the present first two years of college work; the next two years are advanced work leading up to the professional course; and the last two are strictly professional. The course of instruction which leads to the degree of doctor of philosophy and to the higher degrees in science are on exactly the same basis, except that the last period in this case is three years.

In reference to the degree of bachelor of laws a little injustice is perhaps involved. A man who has already taken the bachelor's degree ought to receive the degree of doctor — the exact degree has not yet been determined. I understand that the University of Chicago has already taken action in that respect. We are now working on the degree of doctor of dentistry, for we feel that it should be given only upon a standard equivalent to that of the medical school.

MR. HUFFCUT: I assumed that we were to take the educational system of our country as it is and inquire whether, taking it as it is, we might properly and justly demand the B.A. degree as a prerequisite for admission to our professional schools. Upon that basis I could not but come to the conclusion that to require the B.A. degree in all the leading professional schools of the country would be to demand more in the life-years of the man fitting himself for a profession than was just to him or to society. However, I have been surprised to find that the question seems not to have been so much whether we should require the B.A. degree for admission to our professional schools as whether we should so change the college course as to make it just and proper that we might do so. Almost every speaker who has advocated the acceptance of the B.A. degree for admission to professional schools has, before he has seated himself, made some sort of attack upon the present college course — either that it requires too much time or that it wastes the time actually required.

Mr. Kirchwey has undertaken to show that my figures as to the age of graduation from the college course are fallacious because I have dealt with averages; but in the statistics from Cornell we have what is known as the median as well as the average, and in Cornell at least we find that the median also will bring the student to the age of twenty-three when he finishes his course. If, then, we add to that the three years necessary for the law course, or the four years necessary for the medical course, we still arrive at the age of twenty-six or twenty-seven before the student is ready to begin his professional life-work — even higher, indeed, if he follows the suggestion of Dr. Starr and takes two years in hospital and a year in Germany.

With the four-years B.A. degree as a prerequisite for admission, the student cannot really undertake the support of a family until about thirty years of age, and, considering the condition in life in which a man who has spent ten years under university auspices feels that he ought to support a family, possibly forty years. With these figures we need not be surprised at what President Eliot has told us regarding the reproductive power of Harvard graduates.

In spite of Mr. Kirchwey's criticisms, it seems to me that the Pennsylvania figures as to relative standing are very instructive upon the point whether or not the high-school graduate is fitted to carry on the study of professional work fairly well in a school in which 43 per cent. of the students are college graduates and many others have had college work; for on the average the high-school graduates fell only three points below the college graduates.

Mr. Eliot has told us that the change at the Harvard Law School resulted in a slight decrease only, which was quickly made up, and perhaps that has been the experience in other institutions. But the change in Harvard was not a radical one, nor will the change at Columbia be a radical one. Seventy per cent. of the students in the Harvard Law School were holders of the B.A. degree when this change was made, and now upward of 60 per cent. of the Columbia students hold the degree.

If we do not make the B.A. degree compulsory, I believe that an equally high point of excellence in instruction and acquirement will be reached by voluntary processes. I do not understand that any change was made in the methods or in the extent of the instruction in the Harvard Law School because of the change, and I do not feel convinced that a higher degree of efficiency will be found in the university professional schools merely because they insist upon the B.A. degree as a prerequisite for admission.

MR. ELIOT: In regard to the statistics as to the age of Harvard graduates—I will not say anything about the graduates of other institutions—I am afraid there is no escape whatever from the conclusion that the age of graduation has risen at least two years during the past forty years. I not only publish the average age of the persons that enter Harvard, but I itemize those who enter between fifteen and sixteen, sixteen and seventeen, seventeen and eighteen, eighteen and nineteen; and those tables show exactly what has taken place. A few years ago I assembled two hundred cases of Harvard graduates between forty and sixty years of age who had become distinctly eminent in their respective lines of life, and I found that those men had entered, as a rule, between the ages of sixteen and seventeen. Ten years hence it will be impossible to assemble any corresponding group.

The mode of counting one or even two years of academic life or university life, we will say, toward two degrees seems to me a very artificial system of treating academic degrees, professional or other; it has been tried in several of our institutions, and, it seems to me, conspicuously unsuccessfully tried. It requires a very elaborate explanation to any parent, to any boy, who is thinking of trying it; and, moreover, it is giving a certificate for what has not been done. I do not believe that is a good plan, especially in institutions of education. I believe that we may look forward to the absolute failure of any such system.

I believe every word Mr. Barker said about the necessity of preparation in certain subjects for the professions of medicine, law, and theology while the youth is in college. The doctor is a naturalist, and he needs from the time he is twelve years old to cultivate his mind in the naturalist direction. Just so with the lawyer. There is a method developed in our country of accomplishing these objects. Some call it the elective system, and some the group system. Either will do it, and either has done it in American colleges; and somehow or other that thing has got to be done. Why? Because there is absolutely no line between culture subjects and professional subjects.

President Hadley recently gave an admirable definition of what we wanted the college to effect—to teach the college youth civic duty and religious earnestness and breadth of mind and aspiration; to teach him public service as the root of American life, and, therefore, of American education. Now, that is the educational gospel, not of the American college only, but of American education from the primary school through the professional school; and I know no subjects better adapted to develop these qualities than those taught in a medical school.

Lastly I want to say that I do not accept the present condition of American education as our standard of duty. I have seen a good many changes in American education myself, all good, and they have all been great departures from the then state of American education. Let us do some more of it. We want to change the present proportion of college graduates in American professional schools. I do not accept the standard of the argument of my friend from Cornell; the present state of most American professional schools is bad. That is just the thing we want to change. And I may add that I do not accept the present state of the American college as perfection; not by a deal. It is something we want to improve, something we want to lift up—never losing sight, however, of the standard that President Hadley has set up.

FOURTH SESSION

UNIFORMITY OF UNIVERSITY STATISTICS OF ENROLMENT AND EXPENDITURE

PAPER READ BY MR. F. P. KEPPEL, OF COLUMBIA UNIVERSITY

In our discussion of these questions we have assumed that the primary reason for uniformity is as an aid in solving administrative and financial problems in a broader light and from wider experience than can come to any one institution. Possibly, too, there may be institutions where the preparation of a clear and accurate statement of what is happening within their own walls, entirely apart from comparison with their sisters, would lead to a clearer realization of their needs and opportunities than now exists in the minds of their authorities, and we may do a useful service if we show them how to prepare such a statement. If these immediate needs are met we may be sure that historical students of education will find our records in satisfactory condition for their purposes. Another end to be gained would be to facilitate the migration of students from one university to another without an undue loss of credit toward the degree desired; but this question lies deeper than mere matters of registration, and might well, we think, be made the subject of some future paper which would carry on the discussion of the subject begun in Professor Birge's paper of last year.

Upon this assumption, that our object is to give immediately practical and helpful information, no attempt has been made to distinguish sharply between the two parts of the subject (*i. e.*, statistics of enrolment and statistics of expenditure), as each will be found to react upon the other at almost every point; and for the same reason we have had to give some consideration to statistics of income, although these were not included in our subject.

When we were requested to present this paper, a question sheet (see Appendix A) was sent out to each member of the Association in order to obtain information that could not be found in the printed documents, and to avoid the possible danger that the whole discussion would be colored by Columbia nomenclature and the recommendations adapted especially to Columbia's peculiar needs. In the light of the replies received, it is evident that the questions were too complicated, and in some instances were not clearly worded. Still the replies, frequently from their very diversity, throw some light on the questions under discussion, and, although in some instances we make recommendations in opposition to the views of the majority of the members, this report is based primarily upon them as well as upon a study of the catalogues and reports. Columbia desires to express her thanks to

the other members for their care in the preparation of their replies, and especially to Harvard, Pennsylvania, Wisconsin, and Yale for the suggestions which they offer.

It has not proved practicable to set forth the replies in orderly tabular form, but a rough table used in the preparation of this report, and also the original replies to the questionnaire, are available for such delegates as care to examine them.

It seems to us that the greatest danger from our present system, or rather lack of it, is that a judgment formed from a comparison of total figures, either of enrolment or expenditure, is likely to be erroneous, because there are no common schemes of qualitative and quantitative discrimination. We are all human enough to like big figures, and unless we voluntarily put some restraint on ourselves we are likely unconsciously to deceive others (and possibly to deceive ourselves, which is even worse). In matters of enrolment most of the danger comes from the very wholesome desire of urban universities to meet the demand of the teachers in the public-school systems in their vicinity (and other persons who have to earn their living) for an opportunity to do work in addition to their regular duties which shall ultimately earn them a university degree or some other university recognition. While these students frequently constitute some of the best material in the university, it is obvious that quantitatively they are not doing so much nor costing the university so much as those who are devoting their whole time to study. Yet there is at present almost no attempt at differentiation in our catalogues and reports. In matters of expenditure we are likely to err from the fact that it is rarely possible to find statements analyzed clearly both as to source and as to object; and, further, probably from the fact that the department which prepares the financial statistics usually has little or nothing to do with preparing the enrolment statistics, there is almost nowhere an intelligent effort to make clear, except possibly to the local president and trustees, the relation between the two great factors in our educational problem: the students and the money to be spent for their benefit.

When we consider the possibility of adopting some uniform scheme of enrolment for the detailed statements which now appear in the catalogues of each university, we are met with the fact that it is simply impossible to draw any sharp line between non-professional and professional or technical work.¹ Witness the different places in which applied science and the technical study of education appear in our several university organizations, and the fact that the degrees conventionally regarded as signifying liberal culture, B.A., M.A., Ph.D., may or may not be granted for work in technical subjects. Another difficulty, related to the first, is that the obvious terms of classification have been crystallized into definite and widely different meanings at the several institutions. The appendix will show that the terms "regular," "special,"

¹In view of President Eliot's address on the universities and the learned professions, possibly what we should have said is that nearly all of our institutions still recognize some distinction between professional and non-professional studies, but that no two institutions make exactly the same distinction.

"non-professional," "professional," "undergraduate," "university," "non-resident," are out of the question for this reason. Take for instance "undergraduate student." At three institutions this means student in an academic or non-professional school and not holding a bachelor's degree; at three others it means a candidate for a first degree in any department; at six it includes students in engineering, at three it does not. These diversities are so great, and the points of view of which the catalogue records are but the outward sign are so unlikely to come together, that we have no little sympathy with one of the members of the Association who intimates rather plainly that it is foolish to try to do anything at all. We need now be in no fear, he implies, of getting a wrong impression from the records of our sister-institutions, because we are on our guard for diversities of organization and phraseology. If we try to get up any uniform schemes, they will be uniform only in name, and will have to be so complicated by notes of explanation that our last state will be worse than our first. On the other hand, more than one other member has signified that there is both a great need for an effort toward uniformity and a possibility that something may be accomplished.

For the reasons given we see no wisdom in recommending any but comparatively minor changes in the schemes of enrolment as they now appear in the several catalogues. For instance, in view of the replies to a specific question, and the fact that at twelve institutions out of fourteen it is possible for a student to take work counting for more than one degree at the same time, it seems impossible to insist on the exclusion of duplicate registration. One institution points out the difficulty of avoiding it in the case of summer-session students returning in the fall, and only three state that exclusion is both practicable and desirable. We do recommend, however, that, wherever possible, a student should be regarded as having registered *primarily* in some one school or as a candidate for some one degree. If it is deemed desirable that the student's name appear elsewhere in the catalogue, not only should a deduction be made from the total figures, but the student's primary registration should be made clear by footnote or otherwise. When a student is a candidate for a professional and a non-professional degree at the same time, we believe that his *primary* registration should be uniformly for his professional degree. We realize that this is not in accordance with the custom now obtaining in institutions where an academic student may elect his Senior year in a professional school, but it seems to us to be the more logical scheme if only because it is as a professional student that we have to pay for him.

Something toward uniformity is possible, we think, in the case of the special student. The replies to our questions have shown us just how dangerous this term is now, and we make bold to recommend its abolition and the substitution of the following two classes: (1) *unclassified candidates for a degree*, to include those students who have completed the regular entrance requirements and are really of the same

grade as the so-called regular students, with whom they should be classified; and (2) *irregular students*, to include those whose entrance qualifications would not admit them to candidacy for a degree. It is when this last class is too large that there is a danger of lowering the standard, and by segregating them this danger may be watched more intelligently.

We would recommend also that the students enrolled in the graduate school under its different titles should be limited to those qualified for candidacy for one of the higher degrees, and that they should be classified as follows:

A. In residence.

1. Those devoting their whole time to the work (or at least qualifying themselves technically to obtain the master's degree in one year, or the doctor's in three).
2. Those devoting less time than Class 1.

B. Not in actual residence.

1. Students on traveling fellowships.
2. Students absent on leave, but still candidates.

In each case the period of residence should be shown.

If there are any other students whom the system of organization requires to be registered in the graduate schools, they should appear as a third class under A.

It might be well in connection with the list of students enrolled in the graduate school to call attention to the total number of students in (a) the summer sessions and (b) extension courses, who are doing work toward higher degrees.

Upon the same general classification, students (a) in summer sessions, (b) for a single quarter, (c) in short courses, (d) extension students, and the like (if the instruction is given by university officers and the work is of the same grade as that given within the walls) should each be divided as follows:

1. Candidates for a higher degree.
1. Candidates for a first degree (or certificate).
3. Non-candidates.

We recommend that officers of instruction who are permitted to be candidates for degrees should appear in their proper place as students; also, that care be taken to see that accompanying the name of each student be any degree which he may hold, with the institution granting it and the year of conferring. It is certainly desirable, too, in the case of a graduate student (and it has been suggested that it be done throughout), to show the years of residence at other institutions, regardless of degrees granted.

If these changes in the catalogue registration-lists were made, we believe it would be of some value to all the members of the Association; but nowadays it is not only, nor even primarily, to the catalogues that we turn for information about our sister-institutions, but to the annual reports; and if in each of these reports certain classes

of information could be prepared in a common form, it would be of far greater importance.

It seems perfectly feasible for each institution to have prepared (1) two uniform sets of figures of student enrolment which would show the bulk of its work, and, as far as figures based on previous preparation may show it, its quality; and (2) a concise tabular scheme of the registration in each department.

These figures should relate to the work of the academic year just completed, be prepared by each institution on or before July 1, and should be furnished upon request to the head of any other institution for his guidance in the preparation of his annual recommendations. The general tables, and if possible the departmental ones, should appear in the next annual report of each institution, or, in the case of institutions publishing no reports, in the next annual catalogue. These report figures would not necessarily agree with those previously published in the catalogues. We should always keep sharply distinguished the lists and figures that must be prepared for administrative purposes at the beginning of each year, for which there is at that time a natural public demand, and the final enrolment figures (the figures with which this Association has mainly to do, and for which there need be no call until the end of the academic year). Indeed, it might be well to refer to all figures appearing in catalogues, almanacs, etc., as *preliminary registration*, as opposed to the *final registration* appearing in official reports. We have suggested a sub-table for the annual reports which will balance the two sets of figures.

The general tables¹ should be as follows:

I. SHOWING THE AMOUNT OF TIME IN RESIDENCE (LABORATORY COURSES COUNTING HALF-TIME)

CLASS I.—Full time.

- a) All candidates for a degree in the normal time (*i. e.*, B.A., four years or less; LL.B., three years or less; M.D., and engineering degrees, etc., four years or less; M.A., one year; and Ph.D., three years or less (*qua* residence). A student who has dropped a class, but is doing full time, would come under this class.
- b) All non-candidates taking twelve hours or more per week for not less than thirty weeks in year.

CLASS II.—Partial time in actual residence.

- a) Candidates for degrees in longer periods than the normal (holdovers, students actively engaged in teaching, candidates for degrees in summer session, etc.).
- b) Non-candidates taking less than twelve hours per week for not less than thirty weeks. (This would include all summer session not under II a).

CLASS III.—Not in actual residence.

- a) Students on leave of absence.
- b) Extension students.
- c) Auditors.

¹ The tables, to be most useful, should give not only the totals under each class, but also, in parallel vertical columns, one for each administrative unit of the University concerned, the figures which make up those totals.

SUB-TABLE TO BALANCE CATALOGUE FIGURES AND REPORT FIGURES

1. Students leaving before end of work they undertook to complete (possibly itemized as to causes for leaving).
 2. Students entering after preparation of catalogue.
- II. SHOWING BY TABLES THE QUALITY OF THE PREPARATION OF THE STUDENTS FOR THEIR PRESENT WORK**

CLASS A.—Holding the B.A. degree or its equivalent: *e. g.*, some engineering degree upon which candidacy for the higher degrees may be based.

CLASS B.—Showing evidence of the completion of a satisfactory high-school course or its equivalent.

CLASS C.—Other students, if any, appearing on enrolment list.

Possibly it would be worth while to create a class between A and B of students who can show evidence of some university or professional training beyond a high-school, but less than Class A. Such a class now would be mainly for the holders of normal-school certificates, but in the future it seems likely, from the discussion at this meeting, to be more widely useful, as showing a specific course of preparation, not leading to a degree, for some course of professional study.

In our question sheet we tried to find out whether there was any general preference for basing such uniform tables as might be suggested on (*a*) the students' preparatory work, (*b*) candidacy for a degree, (*c*) actual amount of residence. No two institutions sent the same reply; so we have tried to include all three, the first table being, as far as possible, a combination of (*b*) and (*c*), and the second based on (*a*).

In each case all that we recommend is the publication of the total figures; but as the whole may be ascertained only by the adding together of its parts, it would be practically as easy to make the table in two dimensions instead of one, and itemize each figure according to the organization of the institution concerned. This would make the tables much more valuable, if only in drawing our comparisons we do not forget the infinite diversity of organization.

These two sets of figures ought to show in bulk the quantity and quality of the work done. It would be perfectly feasible, especially with a comptometer, to ascertain the absolute total of hours of instruction to all students; and a comparison of such totals year by year with the corresponding total numbers of individual students might, we think, be very suggestive; but the tenor of the replies to the questionnaire does not encourage us to suggest such a plan.

Besides these total figures, however, we need an opportunity for the comparison of separate items, especially in connection with matters of expenditure, and for this purpose we recommend the adoption and preparation of tables of enrolment by departments, similar to those now used for the Faculty of Arts and Sciences at Harvard (*Report for 1900-1901*, pp. 52-80) and for all departments at Columbia (*Annual Reports, 1902*, pp. 305-51). Of the two, the Columbia scheme seems somewhat the

clearer, but either would serve the purpose. The schemes would be more valuable if (*a*) a statement of the students preparing theses in the department were given; (*b*) a summary were made of all courses appearing in the catalogue, but which were not offered either for lack of students or for other causes (this last, distinguishing as it does between performance and promise, might help indirectly to discourage the departments from offering what are technically known as "paper courses"); and (*c*) a distinction were always made as to the students taking courses as "optionals." The departmental statements of summer sessions and the like may be included or kept separate, as may be preferred. Appendix A will show the attendance-record of one department under the system now used at Columbia.

We recommend simply that such departmental tables be *prepared*. It would, of course, be more convenient if they were printed by each institution, but the main point is to have information regarding any particular department available for those who really need it, either inside or outside the institution.

Besides these three sets of tables, which we recommend for uniform adoption, we should be very glad to see the following sets of statistics included in the annual reports of each member of the Association. They have been proposed in reply to our requests for suggestions. The other suggestions made in accordance with these requests have, we think, already been embodied in this report.

1. The ratio of admission itemized by schools upon—
 - a*) Examination.
 - b*) Certificates of public high schools.
 - c*) Certificates of private high schools.
 - d*) Credits from other institutions.
 - e*) Other evidences of preparation.
2. Age of admission.
3. Percentage of failure to obtain higher standing in final examinations at end of year.
4. Relative success (as shown perhaps by percentage of failure) of students prepared by—
 - a*) Private schools.
 - b*) Public schools.
 - c*) Colleges.
 - d*) Private tutors.

Under the heading of uniformity of statistics of enrolment we believe it is allowable to consider the question of accuracy of statistics of enrolment, and to call attention to the great danger of carelessness in this matter. The financial statistics, apart from their obscurity (to which we shall refer later), are usually accurate, largely because they are constantly under the eye of the trustees, some of whom are sure to be trained business men, and also because they are usually carefully audited; but an error in the enrolment statistics does not come to light automatically, and a mistake of a few units does not seem to make much difference anyway. As a result there is

a temptation to give the work of record-making either to men who are paid primarily to do something else and who are not given the time to do this work properly, no matter how well qualified they may be, or else to turn it over to men employed especially for the purpose, but paid so low a salary that it is an economic absurdity to expect first-class work. Of course, it is idle to recommend that statistical work should be performed only by high-priced experts who have nothing else on their minds, nor is it our place to inquire what a college professor is for, and how much or how little of such work he ought to do. We tried to obtain some light on the question by writing to the heads, respectively, of a railway, an insurance company, and a large department store, stating our problem and asking each whether he could give us approximately the percentage of the total expenditure devoted each year to the keeping of records. In each case we received a reply showing that the record keepers were at the same time performing so many other duties that it was impossible to make such a figure anything more than a mere guess. Apparently, therefore, there is nothing to do but watch the whole problem closely and constantly, paying as little as possible (directly or indirectly) for the work, but seeing that money is never saved at the expense of accuracy in the official figures. In individual cases, a man's registration status may be deceptive (for instance, a mature student registered as an auditor, perhaps for two hours a week, may be much more worthy of full standing in the university community than a senior with a carefully arranged selection of "snap courses"), but these cases correct each other in the aggregate, and we can realize that an intelligently planned and rigidly accurate scheme of registration is of inestimable value, when we remember to what a large extent the enormous expenditures of our modern universities are based on the enrolment figures.

It is our belief that for any of our institutions it is a very wise extravagance to put a thoroughly competent person at the head of this work. (Administratively this is most practicable when the work is combined with that of keeping check on the daily attendance of students.) In our complicated systems an infinite number of questions will arise that should be decided by a person intelligently familiar with the work of the entire university. However, we realize from our question-sheet that the majority of the members do not feel that any very large expenditure is necessary for this purpose, and it is possible that we are overdoing it at Columbia, where the average cost per student is something over \$3.

We do not wish to give a false impression by our emphasis on this matter. Student attendance should not be the only, nor even the primary, criterion for expenditure, but it is bound to be taken into consideration, and we ought therefore to be sure that the figures upon which we base any conclusion are in accordance with the facts. If there is any institution which feels that the uniform statistics suggested in this report would involve an undue increase in the present expenditure for record-keeping, we believe it would be to the interest both of the institution in question

and of its colleagues to decline frankly to prepare the figures, rather than have them prepared in slipshod fashion.

It has certainly been difficult for us to take the position of advising other institutions as to how they should manage their own affairs in matters of student enrolment, and it is doubly difficult when we come to matters of expenditure; and yet we think that anyone who examines the printed financial reports published by American universities will realize that there is certainly a general need for improvement along the lines of greater clearness. The reason for the present obscurity is doubtless that, while the volume and complexity of the financial records have increased with the wonderful development of the universities during the past twenty years, the logical modifications of the original system of bookkeeping—designed for a small college of a few hundred men, all doing approximately the same work and at small cost—have not been made. It is hardly necessary to say that if improvement can be made on a common basis it will be of great service to us all.

APPENDIX A

SAMPLE DEPARTMENTAL ENROLMENT RECORD

DEPARTMENT OF ECONOMICS AND SOCIAL SCIENCE

NUMBER	TITLE OF COURSE	INSTRUCTOR	HOURS A WEEK	STUDENTS										
				A.B.	A.M.		Ph.D.		Special		Aud	Total		
					M.	W.	M.	W.	M.	W.		M.	W.	
A	Outlines of Economics, 2d half.....	Mayo-Smith, Day..	3	117	..	..	..	..	14	..	1	138	..	138
1	Economic History of England and America, 1st half.....	Seligman, Day.....	3	38	..	..	..	..	8	..	..	46	..	46
2	Practical Political Economy.....	Mayo-Smith.....	3	31	9	1	8	..	9	..	..	57	1	58
3	Science of Finance.....	Seligman.....	3	12	11	..	12	..	9	..	1	44	..	44
4	History of Political Economy.....	Seligman.....	3	..	5	1	15	..	2	3	..	24	2	30
5	Economics, Theory I, 1st half.....	Clark.....	3	7	6	1	6	..	..	..	..	15	3	18
6	Economics, Theory II, 2d half.....	Clark.....	3	..	6	1	6	..	..	..	..	18	1	19
7	Communistic and Socialistic Theories, 1st half.....	Clark.....	2	10	5	1	4	..	1	..	..	20	1	21
8	Theories of Social Reform, 2d half.....	Clark.....	2	10	3	1	4	..	1	..	..	19	1	20
9	Seminar in Political Economy and Finance.....	Seligman, Clark	2	..	..	..	..	..	..	..	..	18	6	24
10	Principles of Sociology.....	Giddings.....	2	9	6	..	4	..	6	..	1	27	..	27
11	Racial Demography, 2d half.....	Ripley.....	2	..	..	..	..	..	..	..	..	..	..	..
12	Statistics and Sociology, 1st half.....	Mayo-Smith.....	2	..	4	..	12	1	..	..	..	15	1	16
13	Statistics and Economics, 2d half.....	Mayo-Smith.....	2	..	6	..	10	..	..	..	..	16	1	17
14	General Sociology, 1st half.....	Giddings.....	2	..	15	3	9	..	4	2	..	28	5	33
15	Progress and Democracy, 2d half.....	Giddings.....	2	..	21	8	9	..	4	2	..	34	4	38
16	Panperism, Poor Law and Charities, 1st half.....	Giddings.....	2	..	3	3	3	..	1	3	..	9	6	15
17	Crime and Penology, 2d half.....	Giddings.....	2	..	3	1	3	1	..	..	..	6	5	11
18	Civil Aspects of Ecclesiastical Organization, 1st half.....	Bayles.....	1	..	..	..	8	..	1	..	..	3	..	3
19	Laboratory Work in Statistics.....	Mayo-Smith.....	1	..	3	..	3	..	..	..	..	5	..	5
20	Seminar in Sociology.....	Giddings.....	1	..	10	1	9	1	1	1	..	20	4	24
		Total.....	..	226	117	80	121	7	67	9	4	536+	36+	590

APPENDIX B

SAMPLE RECORD OF EXPENDITURE IN TERMS OF DEPARTMENTS

	Expenditures in Detail	Total Expenditure	From Income of Corporation	From Income of Trust Funds	From Gifts, etc. (including Barnard College)
Brought forward.....		\$143,762.89	\$122,574.23	\$2,500.00	\$18,688.66
GEOLOGY AND PALEONTOLOGY:					
Salaries.....	\$9,500.00				
Departmental Appropriation.....	500.00				
Summer School in Geology.....	200.00				
MATHEMATICS:		10,200.00	10,200.00		
Salaries	23,400.00				
Departmental Appropriation.....	73.85				
MECHANICS:		23,473.85	17,373.85	.....	6,100.00
Salaries	10,600.00				
Departmental Appropriation.....	39.37				
Apparatus	50.86				
METALLURGY:		10,690.23	10,440.23	250.00	
Salaries	7,700.90				
Departmental Appropriation.....	1,149.39				
Special Fund	2,346.91				
Special Equipment Fund, 1900.....	5.47				
Laboratory Equipment.....	.31				
MINERALOGY:		11,202.08	8,099.39	750.00	2,352.69
Salaries.....	5,700.00				
Departmental Appropriation.....	499.92				
Special Equipment Fund	199.96				
MINING:		6,399.88	6,199.92	.....	199.96
Salaries	10,600.00				
Departmental Appropriation.....	1,250.00				
Special Fund	2,610.63				
Special Equipment of Laboratory .....	.32				
PHYSICS:		14,460.95	11,850.00	.....	2,610.95
Salaries	21,650.00				
Departmental Appropriation.....	499.99				
Carried forward.....		\$242,339.87	\$206,087.61	\$4,000.00	\$32,252.26

Whether or not a detailed balance-sheet of the finances of a university is laid before the public, or is available for examination by certain privileged persons, is a matter which each institution may decide for itself; but we think a great step forward would be made if the following rough scheme of classification—or something like it—were uniformly adopted as a basis for the financial records. It is only fair to say that it follows very closely the system recently adopted at Columbia, after a very careful study of the whole question. The strength of the system is, we think, that it has a very simple core—both for expenditure and income—which gives the broad general figures, and that it is possible to give in subsidiary schedules just as

much or as little itemized information as may seem desirable. We realize that the difficulty of such a scheme comes in the case of institutions which are educationally uniform, but corporeally diversified. We hope, however, that by a system of cross-references, where they are necessary, most of the chances for misunderstanding may be obviated.

The scheme is as follows:

UNIFORM TABLES OF TOTAL INCOME AND OUTGO

(When desirable, each item may be elaborated by a subsidiary schedule.)

INCOME

1. Governmental aid.
 - a) State.
 - b) County.
 - c) City.
2. Fees.
 - a) Tuition.
 - b) Laboratory.
 - c) Graduation.
 - d) Miscellaneous.
3. Income of Investments.
 - a) Rents.
 - b) Income from general funds.
 - c) Income from trust funds.
4. Gifts and endowments (actually received during the financial year under review). The place for reference to gifts to come in the future is in some other part of the annual report than the formal financial figures.
 - a) Gifts for the general purposes of the university.
 - b) For designated purposes.
 - (1) To establish trust funds.
 - (2) For buildings and grounds.
 - (3) For immediate use.
5. Miscellaneous.
Sales. (When these affect the principal of trust funds, the fact should be noted.)
6. Borrowed.

OUTGO

1. Current expenses.
 - A. General administration.
 - a) Business administration (Treasurer's office, Bursar's office, etc.).
 - b) Educational administration.
 - c) Buildings and grounds (including insurance, but not interest on money invested or an estimate for depreciation).
 - d) Library.
 - e) Fellowships, scholarships, etc.
 - f) Such other miscellaneous heads as may be needed (chapel, hospital, gymnasium, etc.).

- B. Departments of instruction.
 - a) Salaries of officers.
 - b) Current laboratory expenses. } See table on page 62.
 - c) Appropriations for sundries.
- 2. Miscellaneous payments (not necessarily referring to the operations of any single year, or balancing with any estimate of income).
 - a) Reduction of debt.
 - b) Interest on debt.
 - c) Payments affecting the investment of trust funds.
 - d) Payments affecting funds for designated purposes.
 - e) Construction and permanent equipment.
 - f) Miscellaneous.

If these do not appear in full elsewhere.

At Columbia the statistics of current expense are now prepared with five vertical columns following the items (see Appendix B), in which appear (*a*) expenditures in detail, (*b*) total expenditures under each head, (*c*) the amounts paid from the income of the corporation, (*d*) from the income of trust funds, (*e*) from gifts, etc. This has proved of the greatest convenience to us here, because it shows in connection with each item, not only the amount spent, but the source from which it comes; and we cordially recommend the system for general adoption. As in the case with items of income, this core of information may be expanded indefinitely by subsidiary schedules, and for the purposes of this Association it is, we think, of the utmost importance that some of the items be very thoroughly elaborated in this way, and either published in the reports or made available to authorized inquirers. In particular, educational administration (*A, b*) should be itemized with very great fulness; it should reflect, in so far as possible, the organization of the different offices of administration in the university, with the proportional expenditure for salaries and supplies, and should show the amount spent from each of the annual appropriations for printing, advertising, etc., in such a way as to make clear the office through which the work is done. The matter of salaries, when administrative duties are performed by men who are also officers of instruction, is a difficult point. Wherever possible, the salary should be divided *pro rata*, and where this is not possible, a footnote, indicating that so much service (possibly indicating the hours per week) was performed by officers of instruction in such and such departments, would be a help to investigators.

The most important sub-table, however, should be that of the departments of instruction (B). We have indicated a sub-classification of each departmental expenditure into (*a*) salaries, (*b*) current laboratory expenses, (*c*) appropriations for sundries. In the case of small departments, where the salary item would give more information than is desirable for a published statement, there is no reason why two or three departments should not be lumped together arbitrarily into a "division"—as, for instance, "oriental languages," "biological sciences," and the like.

This ends our recommendations for financial tables. As regards the value of

such tables for comparative purposes, two points are of particular importance. In a country where some of the institutions are supported wholly by state aid, some partly so, and most are aided by benefactions from persons who like to have a good deal to say as to how the money shall be spent, it is desirable to know, before drawing any conclusions, not only the amount spent for any purpose, but the source from which this money comes, and this, we think, has been covered by the two-dimensioned tables of expenditure which we have recommended. We cannot expect an institution to announce that it is spending one hundred thousand dollars a year for, say, conchology, simply because it is conchology or nothing with some particular benefactor; but there is no reason why an opportunity should not be given to read the fact between the lines. The second point is the necessity of sufficient harmony between the enrolment system and the expenditure system to permit each to be studied in the light of the other. This, we believe, may be brought about by the adoption of the department as the primary unit in both, and we have been encouraged to recommend its adoption so strongly because eleven of the fourteen members have indicated that its adoption (as the financial unit) is practicable. For one who has at hand the separate departmental statements of enrolment and expenditure which we have recommended, it is a simple matter of multiplication to learn promptly and accurately just what it costs to instruct one student for one hour in any subject in the curriculum; or, if the classes of students are properly itemized, what it costs to educate each student in any given school. In such estimates it is apparently undesirable (see Appendix B) to try to include a proportionate estimate of the general cost of administration, etc., although the share per student of all expenses other than actual instruction could readily be obtained from our figures. The replies to our questions as to the preparation of such tables are of interest: Ten institutions (including those answering "no published reports" or not answering at all) apparently do not now make up any figures estimating items of expenditure in the terms of student attendance; one makes them occasionally, and three regularly. Of these four, one only includes an estimate of the cost *pro rata* of the general administration; three apparently do not. Only one of the four gives the estimates to the public.

It is beyond our province to consider how much of the financial information upon which such itemized comparisons are based shall be made public; it is, we think, within it to consider how much each member should be willing to furnish, for confidential use, to the properly authorized representative of a sister institution. In order to test the general feeling on this point, we included in our question-sheet the following: "Should the president of any institution represented in this Association have the right to obtain from any other institution, for confidential use, information regarding some item of expenditure not included in the published reports of the latter, *e. g.*, the salary of some particular officer?" The replies were as follows: "Yes," 2; "Right, no; as a matter of courtesy, yes, when possible," 7; "No," 3;

"No opinion expressed because law requires us to publish all such figures," 1 ; no answer, 1 ; total, 14. This, we think, indicates that in general these figures may be obtained under the proper conditions. Personally we see no objection (as may be seen from our reports) to publishing the financial reports with considerable fulness—not so fully that the inquisitive mind may figure out the salary of any particular officer for its own information, but fully enough for the trained mind to be able to find from the reports as a whole such facts as will throw light on local problems. However, the publication of the figures is merely a matter of more or less convenience. The accurate preparation of the material upon which they may be based, according to uniform schemes, such as the ones we have recommended, is, we think, the important point. Beyond that all that we need to do is to remember that we are not rivals, but colleagues.

*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The Fifth
Annual Conference*

HELD IN NEW YORK
JANUARY EIGHTH TO TWENTY, 1919



*THE ASSOCIATION
OF
AMERICAN UNIVERSITIES*

1903-1904



The Association of American Universities

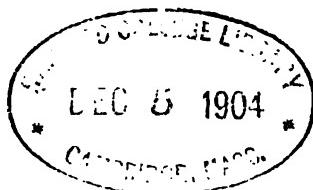
JOURNAL
OF
PROCEEDINGS AND ADDRESSES
OF THE
FIFTH ANNUAL CONFERENCE

HELD IN
NEW HAVEN
FEBRUARY 18-20

1904

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MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois

CLARK UNIVERSITY,
Worcester, Massachusetts

COLUMBIA UNIVERSITY,
New York, N. Y.

CORNELL UNIVERSITY,
Ithaca, N. Y.

HARVARD UNIVERSITY,
Cambridge, Massachusetts

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland

THE LELAND STANFORD JUNIOR UNIVERSITY,
Palo Alto, California

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania

PRINCETON UNIVERSITY,
Princeton, New Jersey

UNIVERSITY OF VIRGINIA,
Charlottesville, Virginia

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin

YALE UNIVERSITY,
New Haven, Connecticut

CALENDAR OF CONFERENCES

FIRST ANNUAL CONFERENCE (organization),
Chicago, February 27-28, 1900

SECOND ANNUAL CONFERENCE,
Chicago, February 26-28, 1901

THIRD ANNUAL CONFERENCE,
Chicago, February 25-27, 1902

FOURTH ANNUAL CONFERENCE,
New York, December 29-31, 1902

FIFTH ANNUAL CONFERENCE,
New Haven, February 18-20, 1904

OFFICERS

1904-1905

President—The representative of the Johns Hopkins University.

Vice-President—The representative of Clark University.

Secretary—The representative of Columbia University.

Additional members of the *Executive Committee*—The representative of the University of California; the representative of Harvard University.

THE FIFTH ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

THURSDAY, FEBRUARY 18, 1904

MINUTES

The delegates were received by the representatives of Yale University, at 12:15 P. M., in the Corporation Room, Woodbridge Hall, and upon invitation of the University, took luncheon in Woolsey Hall, at 1 o'clock.

FIRST SESSION

The First Session was called to order in the Corporation Room, at 2:30 P. M., with Mr. Magie, of Princeton University, in the chair.

The following representatives of the Universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Benjamin Ide Wheeler, Mr. C. M. Bakewell.

CATHOLIC UNIVERSITY OF AMERICA—Mr. George M. Bolling.

THE UNIVERSITY OF CHICAGO—Mr. W. R. Harper, Mr. Paul Shorey.

CLARK UNIVERSITY—Mr. G. Stanley Hall.

COLUMBIA UNIVERSITY—Mr. Munroe Smith, Mr. William H. Carpenter.

CORNELL UNIVERSITY—Mr. Thomas F. Crane.

HARVARD UNIVERSITY—Mr. Charles W. Eliot.

UNIVERSITY OF PENNSYLVANIA—Mr. Josiah H. Penniman.

PRINCETON UNIVERSITY—Mr. Andrew F. West, Mr. Henry B. Fine, Mr. William F. Magie, Mr. John G. Hibben.

LELAND STANFORD JUNIOR UNIVERSITY—Mr. David Starr Jordan, Mr. A. H. Suzzallo, Mr. Ewald Flügel.

UNIVERSITY OF WISCONSIN—Mr. Dana C. Munro.

YALE UNIVERSITY—Mr. Arthur T. Hadley, Mr. Anson Phelps Stokes, Jr., Mr. Thomas R. Lounsbury.

The minutes of the preceding Conference were approved as printed.

Mr. Munroe Smith, of Columbia University, at the request of the Chair, presented an abstract of the PAPER on the "Uniformity of University Statistics of Enrolment and Expenditure," read at the Fourth Session of the Association of American Universities and made a special order for the Fifth Conference.

The following delegates took part in the DISCUSSION of the paper: Mr. Eliot, Mr. Hadley, Mr. Munroe Smith, Mr. Crane, Mr. Wheeler, Mr. Hall, and Mr. Jordan.

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THE DAY OF CONFERENCES

Long Island, N.Y., 1900

~~THE T. L. LEWIS~~

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February 18-20, 1904

CENTERS

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THE UNIVERSITY LIBRARY COMMITTEE—The representative of the University of

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~~THE FIFTH ANNUAL CONFERENCE~~

~~THE FIFTH CONFERENCE~~

~~AT THE UNIVERSITY OF TORONTO~~

~~SESSION~~

~~The following universities sent Delegates to the Conference—~~
~~McGill University—Mr. John G. Hiltz.~~
~~University of Toronto—Dr. Ernest G. White, Mr. A. R. Robinson,~~
~~Queen's University—Dr. George A. Stollin.~~
~~University of Western Ontario—Dr. W. G. Farren, Mr. Paul Shore,~~
~~Concordia—Dr. L. Carter Fox.~~

~~Other Universities—The University of Waterloo, Mr. S. C. Macmillan;~~
~~McGill University—Dr. Ernest G. White, Mr. A. R. Robinson.~~

~~University of Western Ontario—Dr. George A. Stollin.~~
~~University of Western Ontario—Dr. W. G. Farren, Mr. Paul Shore,~~
~~Concordia—Dr. L. Carter Fox.~~
~~Queen's University—Dr. James Smith, Mr. Wilmer E. Chapman.~~
~~Queen's University—Dr. Thomas P. Clark.~~
~~Queen's University—Dr. James W. Zinn.~~
~~University of Pennsylvania—Dr. Isaac F. Rosenfeld.~~

~~Pennsylvania University—Dr. Andrew J. Velt, Mr. John E. Van Alstyne, Mr. John G. Hiltz.~~
~~Emory University—Dr. David Smith, Mr. A. M. Noyes, Mr. John G. Hiltz.~~

~~Leeds University—Dr. David Smith, Mr. A. M. Noyes, Mr. John G. Hiltz.~~

~~University of Wisconsin—Dr. Leon T. Munro.~~
~~Yale University—Mr. Arthur D. Hadley, Mr. Walter Phelps Stokes, Mr. Edward K. Lounsbury.~~

The minutes of the preceding Conference were approved as follows:

Mr. Munroe Smith, of Columbia University, in New York, is to have prepared an abstract of the Paper on the "University of Alberta's Success in Production and Expenditure," read at the Fourth Session of the Association of American Universities and made a special order for the Fifth Conference.

The following delegates took part in the discussion of the paper: Mr. King, Mr. Hadley, Mr. Munroe Smith, Mr. Crane, Mr. Wheeler, Mr. Hall, and Mr. Johnson.

For the convenience of Mr. Jordan who was to read a paper at the Saturday morning session, but found it impossible to be present at that time, it was, upon motion, voted that the program as printed for the Fourth Session, at 10:30 A. M., Saturday, February 20, and that of the Second Session, at 10:30 A. M., February 19, be transposed.

Mr. Stokes, of Yale University, and Mr. Carpenter, of Columbia University, were requested to prepare a report of the meetings for the press.

The session adjourned at 4:45 P. M.

In the evening the delegates were the guests of the President and Fellows of Yale University at a reception given in the Yale School of Fine Arts.

SECOND DAY'S PROCEEDINGS

FRIDAY, FEBRUARY 19, 1904

MINUTES

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held at 9:30 A. M., Friday, February 19, 1904. The representatives of Princeton University, Columbia University, Leland Stanford Junior University, and the Catholic University of America were present.

The following FINANCIAL REPORT was presented by the Secretary, and approved:

Receipts:

From assessments of \$40 each for the institutions represented in the Association	\$560.00
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Expenditures:

For stenographic service at Fourth Annual Conference	\$211.70
Expressage on editions of Reports from Chicago to New York	9.20
Expressage on editions to thirteen Universities	6.40
Printing 800 copies of the Proceedings of the Fourth Annual Conference	264.60
Postage on editions to participants in discussions at Fourth Annual Conference	.76
Printing programs of Fifth Annual Conference	10.75
Exchange on cheques	.20
Balance	\$56.39

Upon motion, it was

Resolved, That it be recommended to the Association that after bills for expenses are received the Secretary be authorized to assess equally each institution represented in the Association, to provide for the payment of such bills and to leave a working balance in the treasury.

Upon motion, it was

Resolved, That it be recommended to the Association that the Secretary be appointed for five years, in order to provide for the continuity of the Proceedings of the Association.

Upon motion, it was

Resolved, That it be recommended to the Association to set the time for the next meeting between the tenth and twenty-fifth days of January.

SECOND SESSION

The session was called to order, at 10:30 A. M., with Mr. Magie in the chair.

Mr. Hadley, for Yale University, and Mr. Jordan, for Stanford University, presented PAPERS on "The Actual and the Proper Lines of Distinction between College and University Work."

The following delegates took part in the DISCUSSION of the papers: Mr. Munroe Smith, Mr. Hall, Mr. Harper, Mr. Eliot, Mr. Shorey, Mr. West, and Mr. Flügel.

Upon motion, the Chair was authorized to appoint a Nominating Committee of Three and announced as such committee Mr. Hadley, of Yale University; Mr. Munro, of the University of Wisconsin, and Mr. Bolling, of the Catholic University of America.

The session adjourned at 1 P. M.

THIRD SESSION

The session was called to order, at 2:30 P. M., by Mr. Harper.

Mr. Bakewell, for the University of California, presented a PAPER on "The Administration, Financial Support, and Circulation of University Publications, Including Doctors' Dissertations and Scientific Journals."

The following delegates took part in the DISCUSSION of the paper: Mr. Magie, Mr. Harper, Mr. Hall, Mr. West, Mr. Lounsbury, Mr. Fine, Mr. Munroe Smith, and Mr. Hadley.

Upon motion, it was voted by the Association to approve the financial report of the Secretary as recommended by the Executive Committee (see above).

Upon motion, the recommendation of the Executive Committee that the Secretary be appointed for five years was adopted.

It was further ordered to be stated in the proceedings that this action is taken with the understanding that the Secretaryship shall no longer be held to be one of the official positions which are by precedent assigned in rotation; and that this does not preclude the institution which furnishes the Secretary having also another member on the Executive Committee.

The Association of American Universities

Upon motion, it was decided that the time for the next meeting of the Association be set in the first half of January.

Upon motion, it was

Resolved, That the question of holding future meetings of the Association annually, or biennially, be referred to the Executive Committee.

Upon motion, the recommendation of the Executive Committee to assess equally each institution to provide for the payment of bills against the Association, and to leave a working balance in the treasury, was adopted.

The Chairman presented the *REPORT* of the Executive Committee concerning certain nominations for membership made at the meeting of December 31, 1902.

The University of Virginia was elected to membership in the Association.

Upon motion, the names of certain institutions were presented to the Executive Committee as candidates for membership in the Association.

The Committee on Nominations reported as follows:

For *President*—A representative of the Johns Hopkins University.

For *Vice-President*—A representative of Clark University.

For *Secretary*—A representative of Columbia University.

For Members at Large of the *Executive Committee*—Representatives of the University of California and of Harvard University.

The nominations of the committee were accepted and the officers nominated declared elected.

Upon motion, it was

Resolved, That the Executive Committee be requested to consider the whole question of membership, including the purposes of the Association, and to make a report at the opening session of the next meeting of the Association.

Upon motion, it was

Resolved, That the determination of place and exact date of the next meeting of the Association be left to the Executive Committee.

The University of California and Leland Stanford Junior University extended to the Association an invitation to hold its next meeting in San Francisco. Mr. Munro, of the University of Wisconsin, extended to the Association an invitation for a meeting in Madison; and Mr. Harper, of the University of Chicago, an invitation for a meeting in Chicago.

The session adjourned at 5:15 P. M.

THIRD DAY'S PROCEEDINGS

SATURDAY, FEBRUARY 20, 1904

MINUTES

FOURTH SESSION

The Fourth Session was called to order, at 10:30 A. M., by Mr. Harper.

Mr. Hudson,¹ for the University of Michigan, and Mr. Shorey, for the University of Chicago, presented PAPERS on the following subject: "Are the Degrees of Bachelor of Science, Bachelor of Philosophy, and Bachelor of Letters to be Preserved or to be Merged in the Degree of Bachelor of Arts?"

The following delegates took part in the DISCUSSION of the papers: Mr. Hadley, Mr. West, Mr. Eliot, Mr. Wheeler, and Mr. Hibben.

Upon motion, it was

Resolved, That the thanks of the Association be extended to Yale University for the arrangements made for the meetings and for the entertainment of delegates.

The motion was adopted in a rising vote.

Upon motion, the Association adjourned at 12:45 P. M., *sine die*.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held on Saturday, February 20, 1904, immediately after the adjournment of the meeting of the Association.

There were present the following members of the Executive Committee:

For Columbia University, *Secretary*—Mr. Carpenter.

For the University of California—Mr. Wheeler.

For Harvard University—Mr. Eliot.

It was voted that the several resolutions referred by the Association to the Executive Committee for action be further referred to the Secretary, to be dealt with by correspondence with the members of the committee.

The committee adjourned at 1:10 P. M.

¹ In the absence of Mr. Hudson, read by the Secretary.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE FIFTH ANNUAL CONFERENCE

THE FIRST SESSION

DISCUSSION OF PAPER ON UNIFORMITY OF UNIVERSITY STATISTICS*

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION.]

MR. ELIOT: One of the questions that attracted my attention at the time the paper was presented is: "Should the president of any institution represented in this Association have the right to obtain from any other institution, for confidential use, information regarding some item of expenditure not included in the published reports of the latter; *e. g.*, the salary of some particular officer?" My answer to this interesting question is: "Right, no; as a matter of courtesy, yes, when possible." That answer was made by about half the persons consulted. I have felt for many years that the published reports of the institutions here represented, and many others, would be very useful, if we could get them. Harvard makes the most complete report it can, both from the President's department and from the Registrar's department, and its Treasurer's statement is the most complete, so far as I know, of any. Nearly every item is printed that can be kept separate, except just the matter touched upon in this question, namely, the salary of each individual officer. We do not print the salaries of individual officers, except those of the President, Treasurer, Bursar, and Secretary. We find that there is great value, even pecuniary, in the publication of every possible item of our receipts and expenditures, but we withhold the particular item to which this question relates. It has also seemed to me that such withholding was justifiable, and even desirable. I know that when one institution is thinking of getting for itself an officer of another institution, the item of the salary paid him by the institution with which he is connected is often a desirable piece of information; but I hardly think that the president of the seeking institution has a right to that information except with the consent of the officer concerned.

MR. HADLEY: If you are willing to change the order of topics, I am prepared to take up the second half of the paper, the statistics of expenditure. The two are in some degree independent one of another.

* This paper was presented by Columbia University at the Fourth Conference and its discussion made a special order for the Fifth Conference.

The first question is: "Is it practicable to keep out of the public reports of expenditure all so-called bookkeeping entries, *i. e.*, items which appear as debits on the balance-sheet, but which really mean transfers from one university account to another?" We publish two reports—a brief one, without cross-entries, and a detailed report or series of reports, where the department is the unit, in which we make no effort to avoid cross-entries.

We do not in our report include any estimate for interest on money invested in university property or for depreciation. We try to make our charge for repairs large enough to more than balance the depreciation, but we account for neither depreciation nor appreciation of real estate. If we have bought bonds at a premium, we reserve certain amounts of their income, that the amount at which they stand in the capital account may be lessened as they mature. In the capital account of the university the item "premium account" will appear. We make provision, if bonds have come to us above cost, for that depreciation due to the approach of the period of maturity. With that exception, we make no allowance for depreciation.

As to Question 5, whenever an item of permanent expense is conditioned upon a gift especially applicable for that purpose, our departmental balance-sheet shows on one side the fund or funds as a liability, and on the other side the expenditure as a credit. We have found it extremely valuable to show as nearly as possible in our report the connection between the expenditure and the purpose of the gift, in such a way that any heirs of the deceased, who might be disposed either to contest the gift or to add to it, may be deterred from the former and encouraged in the latter. We do the same with regard to the income of trust funds, as far as we can.

We are not able to make an estimate of the actual cost to the University for each student in any department or any school. It is extremely difficult to apportion cost in that way. We do attempt roughly to estimate the relative cost of students in different departments and different lines of work, in matters of general administration, but of the specific cost we have never been able to make any accurate estimate. We have prepared estimates provisionally, where the question arose as to the amount that should be allowed to one department for instructing students in another.

With regard to the recommendation for uniform tables of total income and outgo, I question, for the present, from my study of the reports, whether our individual institutions are as yet sufficiently advanced in their own practice to put the different figures in a form available for comparison. I appreciate very decidedly the interest of an inquiry of this kind, but it seems to me we are trying to take the second step before we have taken the first. For instance, Mr. Keppel has a schedule under "income," of things which are not income. If I find a railroad man attempting to charge as current receipts things that are not income, and at the same time making some detailed statistical comparisons, I should say: "Get your separation between income and other things first." Now, what would be thought of anybody who counted as current income the gifts and endowments actually received during the year under review? It would be thought that he was making a very serious mistake. The treasurer has to treat these in his balance-sheet as liabilities on the same side on which he puts the income, but they ought not to be there in a report. The one thing for which you have a report, as distinct from a treasurer's balance-sheet, is to show what is income and what is a part of the capital account. To know where we stand both with the university as a whole and with each department of administration—*i. e.*, each separate faculty—we must see what its income really is and what receipts ought to be excluded from income, what its expenditures really are and what expenditures are chargeable to capital account. When we have got that done,

then it will be time for us to make this detailed classification of use of income and direction of outgo. But if you are putting part of what is not current, but permanent, into income and outgo, the further you subdivide it, the more, it seems to me, you are in danger of obtaining misleading results. I do not wish in this to undervalue Mr. Keppel's extremely good work in this matter, but my criticism would apply to this schedule on that basis.

MR. ELIOT: Several interesting points have been touched upon. Interesting to me in the report of the Yale Treasurer is the marked divergence of policy in the administration of the treasurership between Harvard and Yale. For instance, I should understand this report to mean that at Yale the several schools or departments actually had investments of their own, so to speak, attributed to them in the Treasurer's account, and then that each department has its own income upon those investments credited to it, the actual income being credited as derived from those investments. That is absolutely different from the policy of Harvard, and lacks a certain quality of steadiness or of insurance, I may say, which the Harvard policy gives. This policy at Cambridge has been pursued since the year 1866. We block all our investments, mass them, unless the giver of a particular fund has indicated his wish that that fund should be kept in a particular investment which he specifies. Such funds we will take and so hold, but we never do so without a specific request, because we think it a much less secure way for the giver. The value, even the existence, of the fund, depends on the continued value of this particular investment which he has directed us to keep. In general, we mass all our gifts together and invest them at will, then get every year the average earnings of the entire mass, and credit every fund with that average rate of income. This, of course, makes the entire mass of funds insure not only each particular fund, but also the funds, belonging to any one department. Here is a fundamental difference in the policy of these two institutions. Such things as these, I think, are what universities might learn from each other's accounts, if they were published in an intelligible way.

MR. HADLEY: At the end of each fiscal year you determine the credit on that account for the year past?

MR. ELIOT: Yes. We have, for instance, \$12,000,000 invested in hundreds of different things—pieces of property—and the average income on the \$12,000,000 is 4.58 per cent.

MR. HADLEY: Suppose a certain scholarship has been established, and someone gives \$10,000 for that scholarship? Do you pay 4.58 per cent.?

MR. ELIOT: The income of the scholarship is \$458 for the year that we earn 4.58 per cent. on our massed investments.

MR. CRANE: That is what we have always done at Cornell, and that is still the method that is pursued there. Although it has once or twice been criticised in the Board of Trustees, it has been deemed so much wiser and safer that it has been pursued.

MR. ELIOT: I should say that it is a very valuable university policy. It is very valuable as regards promoting endowments. I have known of many instances in which a man contemplating the making of an endowment has been very much pleased with that policy. If he is going to put in \$10,000 or \$100,000, he sees, the moment I state it to him, that the entire \$12,000,000 insures his gift and the perpetuity of the gift. I can heartily recommend that university policy to this meeting.

There is another very interesting point, touched by Mr. Keppel, where we have not been able to see our way to publicity. He recommends that we find out and publish the cost of what is generally called a department of instruction, or line of instruction, as President Hadley said. Now, at Cambridge we have tables prepared every year, for my use and the use of the corporation, which show that, in the English Department, for example, of Harvard College, including the Graduate School and the Scientific School, salaries amount to \$47,562 that year. Every man's salary is put down from the highest to the lowest, and it is all footed up. That is done for English, French, German, Classics, Mathematics, Zoölogy, etc.—all lines of instruction, or departments of instruction as we call them. Those figures it has seemed to me undesirable to publish.

When it comes to the receipts classified in a similar manner, I think there is great difficulty in getting the figures right, and that it is not expedient to publish those figures either. For instance, how are you going to get at the receipts of the Department of Classics, Greek, and Latin? There are so many students, partly graduate students, partly undergraduates, who are taking the elective courses in Greek and Latin in any year, and each one of them has elected, we will say, five courses, and two of the five are in Greek and Latin. That student is paying a lump sum for tuition of \$150, and two-fifths of that, \$60, you may say is the income of the Department of Greek and Latin from that student, and you can divide up the fee in that way among the courses which the student pursues. But when you have done that, it is pretty doubtful if the result of that division really represents the income of the department from tuition fees even. A student in one department makes a call on the College for expenditure very different from that of a student in another department. It is probably inaccurate and unjust to attribute to each course the same proportion of the lump tuition fee. The basis of the calculation is very questionable. And then there is the University objection to looking at the different departments in that way. Classics costs the large sum of \$47,000 in salaries alone; and classics is the subject of only 500 choices, we will say, and each choice is worth \$30 out of the tuition fee of the student. That is only \$15,000 of income, calculated in that manner. What a contrast—salaries, \$47,000; supposed income from tuition fees, \$15,000!

If you were to go through the University and classify receipts and expenses in that way, you would present a table which would be very misleading as a guide to what university policy ought to be. I am not willing to accept the doctrine that university development of departments should be guided by any such table. I have had this subject under consideration at home, because we have been inquiring how we could reduce by a certain number of thousands of dollars the total expenditure for instruction in the department of Arts and Sciences. We have had to reject distinctly the argument of such receipts and such expenditures by departments. I do not see how to use such figures in the determination of a wise policy of either expansion or retraction. We do not accept that test for expansion or retraction; and therefore I have come to feel that the schedules which are suggested in Mr. Keppel's paper on this subject are, at any rate, unsuitable for publication. They may be domestically useful, but I do not think they ought to be published.

MR. HADLEY: Suppose there comes to you in 1902 a certain set of railroad bonds, and in 1904 another set of the same bonds. Does the second sum always and forever receive a less income from Harvard than the first, merely because the actual valuation at the time it came to you would be smaller?

MR. ELIOT: That varies in different cases. I have observed that our Treasurers generally prefer to sell, on the day they receive such a gift, the investment in which it is at that moment invested. The Treasurers always do sell, under our system, unless the stock received is regarded as a very good investment and is in a large block. If it is in a small block, \$5,000 or \$10,000, we are sure to sell, no matter how good it is. Even if it is in a large block, the tendency is very strong to sell it. That is because the Treasurers regard anything else as a "gamble" for that particular trust fund. It is taking the chances on it. I have heard it referred to in just that language: "I am not going to gamble on the amount of that trust fund; I can sell it today for so much, and then it will always stand on our books at so much. If I keep it, it is at the chance of its falling or going up. It is good for the account if it goes up, and bad if it falls. I will not take the chances, I will sell it today."

MR. WHEELER: I have been trying to induce our Finance Committee to adopt your method of having an average income, that is, declaring dividends, as it were; and they are very much opposed to it. One member of the committee is the leading banker of San Francisco, who holds, strangely enough, to the view that if we receive a large gift at this time—gifts now being larger than they used to be, perhaps—it is not fair to those who gave the money earlier to use their funds as an insurance of these funds now received.

MR. ELIOT: We have been through that, and are going through it at this moment. We have lately had \$3,000,000, for instance, for the Medical School. That precise question came up with regard to that gift, except the portion of it that was going into buildings. Shall we diminish the dividend of all the old funds, because we cannot earn as much on this new lump as we are earning on our old investments? Our corporation says, "Yes, that is fair." But your adviser says, "No, it is not fair." As time goes on, the present million will be treated in exactly the same way. As the rate of interest falls, the present million will get the same benefit, and that is a very valuable inducement. Moreover, we take some pains in our Treasurer's statement to give the dates of all our funds. I think it adds to the interest of the report. Some of ours, very small funds, go back into the eighteenth century. Everybody knows that such a fund really is not represented in its value to the University by the amount at which it now stands on our books. Everybody knows that that was a gift of four or five or ten times the real value of the cash at which it is now recorded. The date carries that information, and on that account I think it is just and useful. Moreover, it is very fetching, if I may use that phrase.

MR. HADLEY: What do you do when a man comes and says: "What sum will you use in perpetuity for a specific purpose, for a gift of \$10,000—what income will you pledge?"

MR. ELIOT: We say we will not pledge at all; we will not promise anything. We never will promise to pay a given percentage on any fund. We will not promise to pay a given annuity on that particular fund, unless it is something so small in relation to the fund that there can be no question whatever. We say, we will pay our average earnings, our average rate, and you have the advantage of the insurance plan on the invested funds.

MR. HALL: At our institution we have taken a step farther, similar to that which President Eliot describes. Our founder, Mr. Clark, in his original deed of gift, gave so much for this department and so much for that, so much for the Library, etc.; and then he repeated that policy when he extended the University, specifying certain funds that were to go to certain departments. But he

added this additional condition—and that is why we took this step—namely, both in the original gift and in the \$2,500,000 that he added he said that if any one of the sixty odd funds ever failed, the entire fund of the University should be devoted to make it good. We did not know what to do with that condition for a long time, until finally we hit upon the policy, only the past year, of what I suppose is letting each fund insure the others. We have been allowed, in place of assigning a fund to a certain department, to assign a definite fraction; such a proportion of the total income itself, then, goes to this, that, and the other purpose. So that now, if one of these funds should fail, as has happened once, we are enabled to go on and not feel it very much, although it had to be made good, under the conditions of the will, within a year, but we had to take it out of income in order to do it. Now we simply make a net sum, the total income of the University; and the average income is so much that it makes no difference what the income from the separate funds of the Library or the different departments may be; all have precisely the same income; although we had to get a decree of the court to have the will modified in order to make that possible.

MR. ELIOT: I venture to say that we are under obligation to Mr. Keppel for the large amount of actual work he has done on this subject, and that many of his recommendations are interesting. I think we should like to continue to be under obligations to him for continuing this work. The real way to get forward with some of these recommendations, I think, is for him to correspond with the secretaries of the different institutions. I know that he has corresponded with my Secretary, Mr. Green, to Mr. Green's profit and to the profit of us all, and that we have endeavored to introduce some of his suggestions into our own methods of administration. But I somewhat doubt whether our conditions are enough alike to enable us to adopt, in these fourteen institutions, the same methods of registration. I know that at Harvard there is a constant fluctuation going on with regard to registration. The wishes and desires of the young men change from year to year, and our function changes, also, with surprising rapidity; so that what was a satisfactory registration five years ago at Harvard is no longer satisfactory and we have come to have a different one. I will illustrate that. We began years ago in Harvard College to have a category called "special students." They were persons who could not pass our admission examinations and were presumably not candidates for a degree, and they were extremely heterogeneous. Some of them were a very poor quality of student, and others were extremely good. They were utterly mixed in respect to quality. Some of them were mature men having a definite object in view; others were students who had never got on well in preparatory schools and could not possibly pass our admission examinations, but still either their parents or their teachers thought they ought to have a college chance. This is still the case in the category of "special students" in Harvard College and in the Scientific School also. But a totally different quality of special students has recently appeared in the Law School. The Law School can be entered now only by men who have a prior degree in Arts or Science, *i. e.*, we do not take in as regular students any but those who have a degree already. But the "special student" category in the Law School now is a very valuable one, and almost all of them have a degree which would admit them as regular students. That struck me as very curious at first, and it struck the Law faculty as a singular thing. Why should these men, many of whom could enter as regular students, register as special students? Simply because they do not mean to stay in the Law School long enough to take a degree. It ordinarily requires three years to take a degree in the Law School. These men know they are going to stay only one year or two years; they do not mean to stay three; and they therefore refuse

to register as regulars, lest somebody should think hereafter that they had tried to get the degree and failed. This, of course, has altered our view of the special student a good deal, and I suspect that the same change is going to come in our Medical School, which now admits only persons holding a preliminary degree.

Then the class of students referred to as "extension students" is increasing in many of our universities, and I suppose it must be a useful function to serve them. But that class of students is very different in summer and in winter. For instance, I suppose that the winter work at Columbia for persons already teaching and going to Columbia Saturdays only, is a very useful work. It is rather a recent work, and is not work that can be very well carried on except in a large city. But we are getting a class of students that we did not use to get at all, of this same general nature—men, for instance, who are settled ministers, settled within a hundred miles perhaps, and coming to Cambridge twice a week to attend certain courses in our Department of Philosophy or in the Divinity School; and it is very good work for them indeed. We did not use to have a trace of such men. We are very glad to have these men, but it is rather a problem how to register them. The Divinity men are generally graduates of some seminary. Physicians are doing the same thing really, though they are more apt to come for short courses than for courses that run through the year. How shall we register that sort of person?

In short, the problems of registration are new, and new ones arise with rather surprising rapidity. An urban institution has not the same relation to the community in these respects that a university situated in a small town has. I am hardly looking for uniform methods of registration for all the institutions here represented, and yet I think Mr. Keppel's work is a very useful one indeed. I suppose we all desire to avoid to the utmost the padding of our catalogues; that is to say, we want to avoid making any particular department appear to have a larger number of students than it really has. I think Mr. Keppel's work has contributed considerably to free American college catalogues from such padding.

MR. CRANE: I should like to ask President Eliot what these men in the Law School do. Do they come and ask to be registered as specials, or has the college already created such a general class of special students that it will fit any department, or entitle any man who asks simply that he be registered as a special student to be so registered?

MR. ELIOT: In the Law School the practice of registering as special students was an invention of the young men themselves altogether. The faculty did nothing to promote that, or suggest that they contrive it. We did not use to have any special students in the Law School, but since we decided not to admit any but those holding degrees, this category of special students has increased very much, entirely at the option of the young men and by their desire.

There is another phenomenon at Cambridge which is interesting and may exist elsewhere. Young men admitted to the College or the Scientific School as special students nowadays rather often get the degree in a time not much exceeding the regular time, or what we call the regular time. That is, after they have been admitted as special students they demonstrate that they are capable of just as good work as anybody else, or as the men that have been admitted by examination. They demonstrate that they are men of like capacity and power, and they make up any deficiencies that may have existed in their previous record. So that in the report of the Dean of Harvard College you will see so many men transferred from "special" to "regular"

every year. Those transfers are made on that ground. Students admitted into the Scientific School are transferred to the College, and students admitted to the College transfer themselves to the Scientific School. That is, they may modify their aims while in residence, and make a corresponding shift of their registration. These shifts are becoming commoner with us—that is, a shift from the category of "special" to "regular," from the College to the Scientific School, or from the Scientific School to the College. Of course, for that latter sort of shift there is a reason with us, because we have raised the requirement of admission to our Scientific School so much in the last four years that now really the only striking difference is that in the admission to the College a certain amount of Latin is required which is not required for admission to the Scientific School. Accordingly, an able fellow will enter the Scientific School, discover that there is nothing but a modicum of Latin between him and the degree of Bachelor of Arts, and in a couple of summer vacations he produces all the Latin that is required.

MR. LOUNSBURY: I should like to ask President Eliot whether men are admitted as special students in the Law School who have not received a degree.

MR. ELIOT: Certain men are, yes. We have a requirement of examination for admission, unless they hold a degree; or a certain number of years in some other law school will also admit them; but those men are quite few. The far larger part of special students are men who already hold a previous degree.

THE SECOND SESSION

THE ACTUAL AND PROPER LINES OF DISTINCTION BETWEEN COLLEGE AND UNIVERSITY WORK

PAPER READ BY PRESIDENT HADLEY, OF YALE UNIVERSITY

The actual lines of distinction between college and university work vary in different countries and in different localities. In England the university is primarily and chiefly an examining body; as contrasted with the colleges, which are primarily and chiefly teaching bodies. In France the university is an administrative organization to supervise and regulate instruction; while the detail of this instruction is left to the several colleges or schools. In Germany the university is a group of faculties which prepare men for the various learned professions; being distinguished alike from those collegiate institutions which have but a single department or faculty, on the one hand, and those which prepare men for occupations of less antiquity or lower social standing, on the other. Nor is there any consensus of usage in America itself. There is a general tendency to apply the name "university" to those institutions which are more advanced in their teaching or more complex in their organization; but there is no definite line of demarkation or well-recognized basis of distinction. We cannot use the English basis of division, because our faculties are occupied with the work of teaching and examination both; and there is no

such separation of functions or of organization for the two purposes as exists in the mother-country. We might have applied the German system fifty years ago; but we can hardly do so today, because we have practically abolished the old artificial division between learned and unlearned professions, and we now teach engineering or technology in much the same places and in much the same ways that we teach law or medicine. We cannot apply the French definition, except in connection with some of the state universities; because there are very few of our American institutions where the work of supervision and regulation of public instruction is so largely developed as to form any considerable fraction of their duties.

In the absence of any traditional usage to determine the application of the names, it may be wiser to begin at the other end—to see what are the natural divisions of work done in our higher institutions of learning, and whether there is any one kind of work which can lay claim with advantage to the title of university work *par excellence*.

The instruction given at our higher institutions of learning falls into four groups: academic, professional, technological, and graduate. From the logician's standpoint these names are not well chosen. They are not co-ordinate in form, nor mutually exclusive in their application. But they serve to designate without much practical uncertainty four different parts of the educational system which subsist side by side with one another.

The academic course is the descendant of the old-fashioned New England college, modified to suit present-day conditions. It involves the teaching and examination of a body of students having different professional aims, or perhaps no professional aims at all, but working together in a course which offers an introduction to general culture and a preparation for useful citizenship.

The professional school contains a group of men preparing for one of the three learned professions of divinity, law, or medicine, with its studies subordinated to this professional end. The aims of the different students in such a school are so nearly similar that they can be grouped into classes, and subjected to a common schedule of examinations, with more advantage and less harm than in any other department of higher education.

The technological school offers a scientific preparation for professions which have not in centuries past had the kind of social or educational standing which has been accorded to divinity, law, or medicine. It differs from the professional school in its type of organization—partly because preparation for different callings is carried on to some degree in the same classes, so that the groups are not so sharply separated as they otherwise would be; and partly because the course of study in these technological and scientific schools is apt to include a certain amount of study intended for general culture and mental training, as distinct from purely professional training.

The graduate school differs from the three departments of instruction previously named in providing for the needs of individuals rather than of groups of men. It does not attempt to give general preparation for citizenship, like the academic college, nor even to provide instruction for large and well-defined bodies of men, as is done by the professional

or technological college; but to enable the student to engage in the pursuit of that specific line of truth in which he is interested, and to prepare himself as an expert to help other men who are going to be interested in his processes and results. In any large university the graduate students in any given subject will, of course, naturally be associated into classes of larger or smaller size; but this association in classes is an accident of the situation rather than a primary basis of arrangement, as it is in other departments.

Fifty years ago, when the American people first began to speak of universities as distinct from colleges, there was a tendency to confine the term "college" to the academic department, and to regard the others as forming a university by their accretion. The academic departments seemed to correspond to the English colleges; the schools of law, medicine, theology, and science, to the German universities. The possibility of making this distinction was, however, broken down by the widening of the elective system, which introduced a great deal of the study of science into our academic departments; and still more by the development of a certain kind of technological school, which taught a great deal of scientific theory and something of general-culture studies, with relatively little of the purely technical work which characterized many of those schools of the earlier time. Under such circumstances the distinction between academical colleges and technological colleges broke down completely.

In the face of this fact, there has been a tendency in some quarters to apply the name "colleges" to the academic and technological schools, and to regard the professional and graduate schools as forming the university proper. This is an attempt to apply the German distinction to the United States as far as the circumstances admit; the graduate department, in this view, being a school of philosophy, which with the three departments of theology, law, and medicine constitutes the complete German university scheme. The difficulty with this way of doing things is that there is no natural connection between the methods of the professional school and those of the graduate department. They stand at opposite poles of our educational world. The graduate department is the place where the instruction is freest and most individualized; the professional school is the place where the instruction is most systematically arranged for large groups of men, rather than for individual needs. This divergence of purpose, and the divergence of methods which it involves, make it difficult to apply the name "university work" for these two extremes, to the exclusion of the college and the technological school, which are conducted in a manner intermediate between the two—with much more individualization than is possible in the professional school, and much less than is possible in the graduate school.

Still another line of distinction is to regard as colleges the academic, professional, and technological schools, and to treat the graduate department as representing the proper sphere of university work.

This distinction is more logical than either of those previously named; but practically it involves us in very considerable difficulties. For there is in most of our institutions no such division of graduate and undergraduate work as the rough and ready use of this dis-

tinction would imply. Graduates and undergraduates meet in the same classes and do the same work. It may perhaps be said that the work of the graduate student would be of a higher grade than that of the undergraduate who is associated with him in the class-room; but, so far as I can find out, that generalization is not at all fully borne out by the facts. The reading of the graduate student will usually be more voluminous, his work more patient, his results more ponderous; but I have seen more than one thesis for the doctorate of philosophy from universities whose graduate departments stand deservedly high which did not come up to the standard which is required for honors in the undergraduate department. I am making no invidious comparisons in this matter, for I recognize that Yale is open to this sort of criticism as well as other places. I am simply protesting against that inevitable tendency of men who are teaching students in specialized courses to claim, tacitly if not explicitly, a higher value for their instruction than they would accord to those who are teaching large classes in recognized professional or academic channels. If a first-rate teacher is giving individual instruction to a first-rate student, it represents the very highest type of education we can have; but if a second-rate teacher is giving individual instruction to a third-rate student, it represents education of a very low type. If we allow such teachers and such students to call what they are doing by the name of "university work," they will be led to form an undue estimate of their own importance; to attach a value to what they call original research, independent of the probability that valuable results will accrue therefrom; to consider the muck-rake as the chosen instrument of higher education, and deem a man worthy if he has gotten together a considerable heap of his own sweepings, with relatively little regard either to the value of the contents or the completeness with which he has cleaned up the district assigned to him. This result seems to me an almost inevitable consequence, and a distinctly bad consequence, of appropriating the name "university" *par excellence* to our graduate schools; and I think this practical evil outweighs any advantage which the logical convenience of the distinction may afford.

For there is another term which can be properly applied to the work of such students—the term "non-collegiate." It is thoroughly distinctive. It does no injustice to the good men, for their work needs no artificial label. It simply discourages the bad men from attaching that undue value to their activity which the use of the term "university work" involves. A college is a group of men whose collective activity counts for much—men pursuing the same studies in the same class-rooms and under the same social and ethical influences. The professional school has all these characteristics. The technological school has them in somewhat less degree. The academic department, under existing conditions, has its class-room work less strongly centralized and its student body less homogeneous; but the social and ethical influences of college life are so strongly emphasized to the undergraduate academic student that they give his work and his life a collegiate character. Side by side with these collegiate students we have in our graduate departments and in our various organizations connected with the university a very considerable number of non-

collegiate students. A few of them are the very best men in a university; a somewhat larger number are (intellectually) the very worst; a larger number still—intermediate between these two extremes—with the capacity to be useful members of an intellectual society, but fatally liable to become nuisances if unduly flattered. All these students, collegiate and non-collegiate, are organized into a more or less compact body which constitutes the university. I should incline to the opinion that it would be well to confine the name "university work" to the organizing and co-ordinating activity exercised by professors, students, and administrative officers in connection with this body. This would be an approximation to the French usage, rather than to the English or the German. I believe that on the whole a Frenchman is a safer guide as to verbal usage than an Englishman or a German. He is handling a language which has been precise in its terminology for a far longer period than either of the others. He has enjoyed a training which lays more stress on accurate expression than is the case in England or Germany. And finally, most important of all, the French usage seems less likely to be made the basis of misleading emphasis than the English usage, the German usage, or the rather loose American usage which has tended to prevail in recent years.

THE ACTUAL AND THE PROPER LINES OF DISTINCTION BETWEEN COLLEGE AND UNIVERSITY WORK

PAPER READ BY PRESIDENT JORDAN, OF LELAND STANFORD JUNIOR UNIVERSITY

The college in America, with its four-year courses, covers with the average well-prepared student the educational period from the age of seventeen to twenty-one. Men and women a little precocious may reach this period earlier; with a much larger number the period is reached later in life, because the preliminary studies have been delayed through illness, uncertainty of plans, or the necessity of self-support or the maintenance of others. The university, using the term in the sense determined for the purpose of this discussion, begins when the college leaves off. It furnishes professional training—the instruction of the lawyer, the physician, the clergyman, the engineer, the teacher, the scholar, or the investigator. That there is now no actual boundary between the college and university in America, excepting the artificial one of the certificate or degree on completion of a four-year course, may be readily granted. That there can be, and therefore should be, none in our educational system will perhaps appear from the discussion which follows.

In a general way, the American college course, extending to the Bachelor's degree, stands for general culture, all-around training, the degree of enlightenment necessary to success in any kind of intellectual pursuit. It arose in tradition, was developed in accordance with a theory, and is now being subjected to the modifications of practical experience. We live in an age in which no training is lost, no knowledge comes amiss, and no time can be wasted, if we are to reach the best results; and results in this age are expressed in terms of action. The college course is no longer the prerogative of any special class of men, a

mark of social status. The gentleman in the old sense, the man of hereditary leisure, is no longer a factor in our strenuous democracy, and the degree of Bachelor of Arts is no longer a badge of the gentle caste. It has no value save as a promise of achievement. Hence the college course is in these times subjected to a great variety of influences, in the aggregate bringing about a great variety of results.

In the first place, the traditions of the English tripos no longer dominate our higher education. We recognize that Greek, Latin, and mathematics furnish the best training for some American boys—"Greek-minded, Roman-minded men," to use Emerson's phrase; but for the most of those who demand higher education they have no superlative value. They furnish culture only, as other subjects do, through mastery. The spirit of individualism, which is the spirit of work, has broken down the traditions of ages. Little by little one subject after another in the classical courses has given way to something else at the demands of individual taste or needs. There is now no longer any single subject, the English language perhaps excepted, which our college authorities will agree to consider as fundamental to higher education. The degree of Bachelor of Arts may be given in our strongest universities to students who have had the elements only, if indeed they have had any part, of the ancient tripos of Greek, Latin, and higher mathematics.

The demand for modern studies—for science, history, economics, modern languages—was first met by what I have elsewhere called the "patchwork stage" of the college curriculum. In this period the work of the college was still prescribed, but its different elements were shortened—a year taken out of Greek to make way for history, a year out of Latin for physics and chemistry, six months from calculus to give place to biology, and the rest adjusted in like fashion. The patchwork system meant superficiality, the loss of training value. Discipline was not replaced by enthusiasm. The courses were too short. When any single subject caught the attention of the student, the caravan moved on in haste. He was forced to let go as the subject gave place to some other.

The inevitable end of this condition was found in the elective system. The student cannot undertake to master even the rudiments in all lines of human activity. Either the college or the student must choose. The college selects those lines of work which it regards as most generally useful or most available for its purposes, its own resources, limitations, and relations to sister-institutions being considered. Among these lines of work the student makes his own selection, either freely or under advice of a major professor, either in fragments or as a whole, in accordance with the tradition or the policy of the university in question. The elective system virtually rules throughout our college world. In some institutions it is made prominent and its scope is unlimited; in others it is concealed or guarded by limitations useful or hurtful, or vexed by nagging influences of one sort or another.

With the development of the elective system the theory of the college courses ceases to be that of rigid discipline in alleged fundamentals; it becomes that of general enlightenment and broadening of horizon. But in still later times, another theory arises to meet the demands of facts—the theory that the best scholarship is attained through early speciali-

zation developed on a broad basis. For it is clear that a student succeeds only in that which he does with a will. Training is most effective and culture most sure where the element of volition is dominant. In any subject, advanced work has a greater culture value in discipline than elementary work. If the college course, then, is built up with some one subject as its pedagogic axis, and all other subjects are made contributory to excellence in this, we have a higher type of scholar, and a more varied intellectual output; and we have the zeal for research, the finest result of our educational system—a result rare in the classical period, and almost unknown in the patchwork stages which succeeded it.

With the variations in means for training, in pedagogic theory, in entrance requirements, in conditions of retention, in teachers, in local surroundings, in basis of support, we have naturally great differences in the meaning and content of the college course.

In America we have no national educational system. Our colleges are English in birth, German in training. Our state universities are an outgrowth of the public-school system. Our actual universities are half native to the soil, half German; half arising from the oversoul of the colleges, half modeled by foreign methods and experience. Our professional schools have been until lately almost wholly commercial—lectures and licenses to practice exchanged for advertising. The colleges, between the public schools and the universities, elementary work encroaching on the time at the one end of the course, and professional work crowding it at the other, have adjusted themselves as well as they might, and in such final fashion that we can say with pride that of all the number of our colleges no two are alike. With pride, I say, for freedom and fitness are of more importance in education than theory or tradition. Variety means degrees in fitness, and the "survival of the fittest" means persistence of the various higher degrees of adaptation. The very unlikeness among our colleges is a form of likeness. It means that reality is preferred to form. It means the free play of individuality, a range of personal influence for a good teacher, impossible in a more perfect system. It was because of this freedom in individuality that one of the greatest of teachers, Louis Agassiz, preferred his ill-paid chair in our little Harvard of fifty years ago to any university professorship in Germany or France.

In certain ways our recognized colleges are very much alike. All begin with the elements of the humanities and the sciences; most of them end at the top in universities, large or small according to the funds available and the men they can hold. There is sometimes but a single professor doing university work, but even one man of university mold may justify the name of "university." All of them virtually begin where the high schools end, at about the thirteenth year of school life. In all, the entrance requirements follow those of Harvard, sometimes coinciding with these, sometimes trailing behind at a respectful distance. In all, a degree of Bachelor of Arts, or some equivalent title, is granted after four years of study. This period of four years is purely traditional; there is no argument to be made in its defense, and none against it. In the last twenty years the requirements for entrance to college have been raised fully two years higher than formerly, thus carrying the four years of the college course correspondingly higher. Yet, while all else in the

college course has yielded to assault, and has been modified as a whole to meet individual needs, the four years of the course remain and seem likely to be persistent. For this there are some valid reasons, and some of less importance. First we may note the power of student tradition. The student body is conservative. When all official distinctions of the four classes are obliterated by the college authorities, the students still enrol themselves as Freshmen, Sophomores, Juniors, and Seniors. Furthermore, it takes about four years to give a person the college impress. The characteristic traits of a man from Yale or Cornell or Michigan are not clear before the Senior year. The college stamp is worth having as an end in itself. Finally, it is felt that the two closing years of the college course have become most precious to the college because they give opportunity for advanced work in the student's major subject. In this period can be given something of the methods of original research. A senior can do some thinking for himself; he can lay the foundations of his profession, or he can learn to stand on his own intellectual feet. In either case, the last two years mark the transition from the college to the university.

In Germany the college does not exist, and the transition from the secondary school to the university is most abrupt. When the boy leaves the *Gymnasium*, his leading-strings are all snapped at once. In the university all things are his—philosophy, science, music, lust, and beer. They were all alike inaccessible to him in the *Gymnasium*, and it takes a while for him to learn to choose. Hence the remark, attributed to Bismarck, that one-third of the German students wear their lives out in study, one-third drink themselves to death, and the rest govern Europe.

The American college stands between the *Gymnasium* and the university. It is a place for broadening outlooks, for the training of the will. In the West the average college Junior has been more self-dependent, has seen more of the actual stress of life, than the average German Doctor of Philosophy. This is because he was early released from the discipline of others. He has had to choose and to take the responsibility for choice in a hundred ways ever since babyhood; he will work out his own courses of study regardless of our limitations, as he has worked out many other things of greater moment in his life. There are many reasons why the educational system should be one of gradual transitions; the abrupt change from *Gymnasium* to university, surely harmful in Germany, would be totally impossible in a region where youth is self-poised and versatile, as in most parts of the United States. . There is, moreover, no reason in the world why one youth of twelve, fourteen, or sixteen, or eighteen or twenty-five, should know or should study exactly what any youth of the same age knows or studies. This condition of differentiation a well-defined educational system must contemplate. The German system cares nothing for the welfare of the individual man. In the American system the proper direction of the individual is the one vital thing. This is the best ideal of the American college course: four years of residence in a college town helping to form a college atmosphere, with participation in varied activities—athletics, debating, music, natural-history collecting, whatever the side possibilities may be—in contact with enlightened teachers, one a valued advisor chosen

by the student himself, his course of study containing as an axis some one subject pursued so long as to permit in the last year at least a beginning of independent work.

All this is possible in a degree for some students at any American college of repute. It is hard to meet the needs of any considerable variety of students, unless the college is rich enough to maintain a fairly extensive staff of teachers. It is impossible to do independent work when each teacher is confined to the elements of many things without opportunity to follow his own bent. It is impossible to develop much of a college atmosphere in a large city, wherefore most city colleges must throw their stress on professional or university work. Some of them would even shorten their college courses because they cannot make their work effective. When the student lives outside the college atmosphere, he has missed a large part—often the best part—of his college education.

If we now go on to say what is or what should be the work of the university or the professional school, we come to a still more bewildering maze of duties, possibilities, and traditions. If the college course were what I have outlined above, the university and its professional schools would follow it without break, their work standing as a continuation of studies already begun; in fact, there should be no break in space any more than in time: the university and its schools should stand in the same grounds with the college, under the same control, animated by the same spirit. Going from the college to the university would be as simple as going from the lecture-room to the library or the laboratory. I do not sympathize with those who would isolate the university from the college. The university furnishes the college its inspiration; the college furnishes the university its life. Graduate students are not very different from other students. Not many of them, as matters go, can do graduate work only. It is the experience of most institutions that some part of the work of almost every graduate student must be taught in the college classes. Teaching classical graduates Freshman German is a familiar experience in our universities. What is advanced or university work with one is elementary or college work with another, approaching his higher training from a different direction.

So far as professional studies are concerned, especially law and medicine, the variation in practice is still greater. Many of our law schools and medical schools are unworthy of the name of professional school. All unendowed schools of this character, good or bad, may be omitted from the present discussion: they can maintain no standards of their own; they exist because schools are needed, and no other has yet filled their place. Leaving these out of consideration, we have two classes of professional schools remaining—those supported by the state, and those which form part of the endowed university. Those supported by the state must confine themselves to furnishing professional training demanded by public opinion within the state, and, so far as may be, to elevating this opinion. In some degree they must deal with the professions as they are: so many men will be lawyers in the state, and so many will be physicians. The state professional school will make its requirement the highest these men will meet and no higher. At present, the requirement for entrance on professional study is largely that of high-school graduation. Its completion

falls below the grade of entrance on real university work. In many cases the entrance requirements are lower than indicated by graduation from the high school, sometimes much lower. In a very few states the requirement is higher, including two years of physiology and chemistry for the study of medicine, political science and a moral character for the study of law. This is education on a practical basis: take the best you can get, and be content with raising the standard of practice in the state by training as many as possible of those concerned in it, instead of letting them go untrained.

In the endowed university the condition is different. In such institutions there is more room to try experiments, to work out ideals in education. It is possible in such an institution to conceive of an investigator—the lawyer, the physician we aim to make—and to adapt courses and requirements to that end, regardless of the fact that in these courses and requirements we leave the general practitioner behind. It is wise to set the standards very high; for the tone of the profession is set by the best, not by the average. It is through the existence of highly trained men that the value of training becomes felt and appreciated.

Let us find first what we are aiming at, and then adjust our approaches so as to attain that. Let us not make our final result dependent on the level from which we start. To take a California metaphor, which I borrow from Dr. Hurd, when we survey a route over a mountain pass, we look first at the pass. This we must attain, though many ways lead up to it. "Find out what you want in a physician or a lawyer," says Dr. Hurd; "get that and let the ways of leading up to it work themselves out."

The physician or the lawyer the university would make must have a fairly broad outlook; he must have some intensive training in associated subjects or sciences; he should understand the methods of original research; he should know how to appreciate the value of evidence; and he should be a master in his profession. In educating a man we may achieve less than this, but we should certainly not aim at anything lower. To translate this into terms of university usage, the student should have a college course, this containing the basal studies of his profession, and his subsequent work for the professional degree should be the equivalent of that required for the degree of Doctor of Philosophy. The university professional degree should not be given in less than six or seven years after matriculation as a Freshman. One aiming at high excellence, excellence worthy of the university, is not likely to achieve it in less time; therefore the fact that a well-trained physician does not enter on practice before he is twenty-five is no argument for shortening the course or reducing the requirements. If by any process he finished his professional course sooner, he would by just so much fall short of being well trained. Let him be well trained—if he can be—if it takes until he is thirty. Let our railway go over the mountain pass, not dive down again without crossing it, if over the mountain pass is where it should go. It is true that men will say: "I can understand medicine without a college course—I mean to be a physician; and I can graduate in medicine in less time than it will take to go through college." This is all true, but the man who has studied nothing but medicine is not a man

the university cares to train or to be responsible for. He is not a legitimate "Doctor" of medicine.

It is not a question whether a man can learn law or medicine without going to college. The university stands for the best that can be done, the highest training of men of the highest ideals and noblest ambitions. As matters are, we have in America professional degrees representing four different values. For example, taking the degree in medicine, we have the title of M.D. for the quacks from schools which sell degrees either outright or with a thin cloak of lectures and clinics; M.D. from the associations of physicians which constitute most city medical colleges; M.D. from the state universities for work more or less equivalent to college graduation; and M.D. from the universities for a thorough training in medicine, the fair equivalent of the Doctor's degree from the universities of Germany. To what extent professional work may be safely allowed to "dip down" in the college course is a question for difference of opinion. Its utility in that regard may differ with different institutions, and the need of it with different students. Where, as in most city colleges, the professional work is much more serious and severe than the college work, it is as well for it to begin early. In colleges in which the Senior year is occupied almost entirely with social matters it may be well to omit the Senior year, turning the time over to the professional schools. When, as in most state universities, the work in the professional schools is often adjusted to the possibilities of crude, vulgar, or immature men, while the college spirit is singularly earnest, the longer the professional work is postponed, the better. We may notice that the profession of medicine rests on physiology, anatomy, and chemistry—all of them properly undergraduate or college studies. In like fashion, elementary law should be made a college study. It may well form part of a general course of intellectual broadening. Its claim for such a relation is quite as good as that of economics.

Balfour says: The boys in Rugby and Eton "do not care a farthing about the world they live in except so far as it concerns the cricket field, the football field, or the river." Such a condition does not often prevail in our colleges, least of all in our state universities, and lack of interest in the serious affairs of life need not be considered as a factor in our plans of higher education. The very fact that so large a percentage of lawyers and physicians in our state universities actually go through college first, instead of turning to the easier professional schools close at hand, shows at once the value of the college education as a preparation, and the seriousness of the choice on the part of those who take it.

In our schools of engineering the professional work already "dips down" to such an extent as almost to crowd out the college. This is not to the advantage of the student or of the school. We try to do six years of work in four years, and the broad horizon is almost wholly sacrificed for the sake of professional accuracy; for in engineering half-training will not do—a conclusion "almost right" is wholly wrong. We cannot trifle with the forces of nature as a lawyer may dally with a petit jury. Advanced work in engineering may in time be relegated to the university, for the four college years are none too long for the work of adequate preparation.

In all matters we come back to the individual; find out what you can make of him, and adjust all your requirements to that. Then you will have accomplished something; and to achieve individual results should be the sole purpose of all rules and regulations. The trend of our educational movement for the last forty years has been in one direction—toward constructive individualism, the building up of individual culture and fitness by the best attainable means. We no longer send a man over the college course; we help him to find or create such studies as will do most for his future intelligence and courage. We measure our results by the effect of the work on the man. As no two men are alike in their forces and tendencies, so no two men demand exactly the same education; and as the influence of the teacher often outweighs the relative values of subjects, the character of the instruction needed must alter the nature of the curriculum. The college work should reach forward to the university, if the individual is ready for it and needs it. The university student should be given college work, if the latter is essential to his intellectual success.

We shall not escape from the need of a constructive individualism. It is an essential part of the democracy of men, the democracy of science, the democracy of education. Favored men and favored studies have no place in our scheme. Even universities endure for their service to the common individual man. The more perfect the democracy, the greater the inequalities among men. The more extended the training, the greater the need to consider the man, the less the need to regard the mass. Hence, rules and systems grow weaker as men appear. At last, in fact, as already in popular nomenclature, the American college will merge into the university; and when we have occasion to draw the line between the two, it must be a line drawn in the individual life. The university is that part of the system of higher education which concerns itself most especially with professional training, the work of the physician, lawyer, clergyman, the engineer, the teacher, and highest of all the investigator. The college is part of the dividing trunk, of which the university represents the fruiting branches. Similar branches of all grades may spring from any part of the trunk; weaker doubtless most of them are, else the trunk itself were needless; but they are still branches of the same tree, bravely reaching out for sun and air. Great men—great university men—have arisen without the help of the schools; and there are many others to whom the schools will give only a start and a stimulus. Do the best we can with the actual man, and the theoretical system will take care of itself.

To sum up, in my judgment, with the fullest freedom of action, each undergraduate should pursue some major subject chosen by himself and in some way related to his future life. He should follow this with reasonable diligence, doing his work from day to day, those not meeting these requirements being allowed "to bask and ripen" outside the institutions when the influences of idle men can do less mischief. A man who does not learn the value of time before he is twenty-one years old will rarely master it afterward. A college ought not to be a place of killing time, not even primarily or largely a group of gentlemen's clubs.

Under these conditions, the student is ready in his Senior year to do some independent work, or undertake the beginning of professional training. The traditions of Senior idleness, when they exist, should be overcome—a matter easily accomplished if the professors themselves are in earnest. For those students who have no real serious interest in their studies it is a matter of little consequence what the college does. The presence of such persons tends to make a farce of higher education. In case the Senior year is hopelessly lost to social pursuits, it may be omitted entirely. In view of the fact that the rear car of the train was most subject to accidents, it has been proposed in Germany to leave off the rear car of each train in the interest of safety. In the same fashion we may suppress the Senior year.

In most institutions it is better to require four years' work for the Bachelor's degree, in addition to the highest entrance requirements now existing, rather than to relegate the fourth year to the professional school. There should be no abrupt change either in matter or method at the end of the undergraduate course. It is a sound principle that a man should not be forced to go out of his way to take a degree. While it is necessary to deal collectively with large numbers of men, it is a disadvantage to do so; and, as far as possible, the actual needs of each individual should be considered. The university should radiate from the college, extending outward in every direction, continuing work already begun. It should not be a separate school with different methods and sympathies, superimposed upon the college. As President Eliot has clearly shown, the only natural or permanent unit in American university organization is that of the department or the individual professorship; or, still more exactly, the separate sequences or lines of instruction or investigation.

DISCUSSION OF THE ACTUAL AND THE PROPER LINES OF DISTINCTION BETWEEN COLLEGE AND UNIVERSITY

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. MUNROE SMITH: In Mr. Hadley's very interesting classification of the lines of work included at the present time in our American universities, it seems to me that he has treated some conditions which are probably transitional, as if they were likely to be permanent. For example, he treats the technological school as an institution on the same plane with the academic college. He says that the professional schools exist simply for the purpose of preparing men in droves for the practice of professions. He says that these schools have no particular relation to our graduate schools, in which there is no definite professional purpose, and in which attention is centered upon the single student. Now, it seems to me, in the first place, that the distinction between the graduate department, as having purely non-professional purposes, and the professional schools, as having no purpose except professional training, is tending to break down. The graduate department is practically becoming a school of professional training; and in the so-called professional faculties we can see the beginnings of the development of the research idea.

In the German university every faculty discharges a double function. A great majority of the students are being prepared for a profession, and this is just as true in the philosophical faculty

as in the medical or theological faculty. The philosophical faculty in the German university is training servants of the state, including teachers. The great majority of men who enter any faculty are really going in droves or herds just as much as the students in an American law school or medical school. They are pursuing their studies under the form of free election, but they are restricted practically to a very definite course of study by the necessity of preparing themselves for a state examination. In the German law faculty, as I know from experience, they work, like law students in America, along a stated course, practically shoulder to shoulder with each other. And that is true of all students who are aiming primarily at professional preparation in any of these German faculties. But in every one of those faculties—and that seems to me to be the great glory of the university system—provision is made for a select body who intend to qualify themselves for extending the boundaries of knowledge. The seminar system exists in the law faculty and in the medical faculty as in the philosophical faculty.

In the United States the so-called graduate school, which represents roughly the German philosophical faculty, doubtless grew up without definite professional purpose; but it is working out, more or less, into a school of professional training. The function of this school, in most of the American universities, is to educate college professors, but it is educating men in other lines, just as the German philosophical faculty does. It is educating servants of the state—men who, through the superiority of their training, are finding their way into the more or less permanent non-political branches of our federal and state governments. It has also been demonstrated that a man pursuing scientific studies in the graduate school may fit himself as well for earning money in professional activity—as a chemist, for instance—as if he had been through a technological school; and consequently the element of professional training is developing in the graduate school just as it is in the German faculty of philosophy.

On the other hand, I think it is true that there is beginning to be an increased desire on the part of the faculties in the professional schools to stimulate research work; to provide instruction for the smaller number of students whose plan of life is not simply preparation for a profession and the active prosecution of their profession; to give them opportunities similar to those given in the German university faculties through the seminar system. For instance, in our development at Columbia we can see that the scientific side of our Graduate School is acting very strongly on the Medical School and on the technological schools. In the same way, the political side of our Graduate School has really profoundly modified the work of the Law School. Consequently the distinction on which President Hadley has dwelt, and which undoubtedly exists in the great majority of American universities, is, I think, a vanishing distinction.

Finally, as to the position of the technological schools. We treat the technological schools of Columbia as institutions which are bound, in the long run, to be raised to the level of the older professional schools and of the Graduate School, rather than as schools that are to be kept parallel with the college. The intensification of technical work in the technological schools has led to the demand for an increased liberal preparation. We are not trying to solve the problem by injecting a certain amount of liberal education into the scientific education; we are trying to demand liberal education as a preparation for the work of the technological school. Here again we are in a transitional stage. The technological schools are being raised to a higher level. As a matter of fact, we find that it takes a man two years longer to prepare for the technological schools of Columbia University than to prepare for admission to the college; and the opinion of the faculty which con-

trols these technological schools is that sooner or later we shall demand some portion of the college course as a basis for entrance. It seems to me evident that the drift is more clearly toward the German university idea than Mr. Hadley is willing to admit. If we ultimately put the new professions on the same level with the old professions, and if we infuse into the professional schools the spirit of research, and if we recognize that the graduate school is also a professional school, then it seems to me we come logically to a distinction which puts on one side the academic college, and on the other side the university, in which are grouped all these schools of special training that are more or less imbued with the research spirit.

MR. HALL: It seems to me there is a very sharp line of demarkation between those rather mature men who are going into a settled profession, like law, medicine, theology, and to some extent technical pursuits, and that other body of young men who have already established their competence to live by a certain specialty. The needs of those young people are quite distinct, and the best test of a university is the extent to which it can minister to them. For instance, here is an able young man who has decided to take the rather desperate chance of being a physicist, or a mathematician, or a biologist; the test of real university work is what the institution can do for that man. If a man cannot take, say neurology, because it belongs to the medical school, or if he cannot get access to the professors from whom he needs daily guidance, because the institution is so very large and the professors' care must be distributed among so many different people, we are not doing at least the ideal thing for that particular young man. The history of academic life in this country shows that those men of special gifts who have taken this rather desperate chance to live or die, sink or swim, with one particular science, have had a very hard time in our institutions. They are generally men of small means; they have exhausted their parental resources, or perhaps the parent does not quite know what it means for the son to go on unless he is going to be a lawyer, a doctor, or a clergyman. The central part of this discussion is what an institution can do for such a man. Can it give him every facility in the use of the library? Does it make everything ancillary to the needs of that particular young man, because those men better repay work done for them than the shoals of the incompetent? That is the very best test—the professor sitting down with that one man, or very small group of men, and putting two or three bright ones into the best conditions where they can be helped, by seminar work, in pooling their common knowledge, and by other methods, but above all by allowing them academic freedom. Here the freedom of the institution ought to be given to those young men.

I fully agree with all that President Hadley said two years ago about the danger of deluging the country with crude publications; but it seems to me that these young men have a rather peculiar right to speak to others in their line, and to feel the baptism of printer's ink, the echo and consensus of competent inquiry. I would have not only provision made for printing, but very speedy printing of everything that is of value for those young men. Our experience convinces us that there is danger of too long apprenticeship to the methods of lessons and lesson-reciting. It used to be often remarked at the Johns Hopkins University that the mind of a man who had served a very long apprenticeship in lesson-getting and reciting becomes stiff and cannot move independently. Some of the best graduates, men who stood highest in our best institutions, therefore, seem to be absolutely incompetent to get their minds into independent movement, with the idea of facing the printer, and doing anything that was really original, or even attempting to add to the sum of human knowl-

edge. They were so trained in the attitude of discipleship and receptivity that those higher powers were gone.

I want to ask if President Harper will tell me what their experience has been at Chicago. Our trustees decreed that a docent might be appointed in any department who should be absolutely independent of the head of that department. That was the essential thing, that he should be accountable to the president alone. Every year we have appointed a docent. I do not fancy the name, but it has been a pretty good institution, and it has grown with us. We give the docent no salary, but all these courses have been very well attended. I have felt the brunt of this question of academic freedom myself, because last year two very bright men in my department lectured along lines or in fields in which I was lecturing, and all I had taught in that particular course they actually subverted, if they were correct. I have a young man this year in my department who is lecturing from a radically opposite standpoint. He is taking all my students and lecturing from an exactly opposite point of view. If he is right, I am all wrong. We are doing that in other departments. The question has been raised with us, since we have a good many young men who come back from Germany with their degrees, and perhaps a year or two of further study to their credit, awaiting appointment, whether it would be practicable to give them a kind of degree or certificate so that they would have not only their annual appointment with us, but would also have a certain kind of status elsewhere. I should like very much to know what the term "docent" means in Chicago.

MR. HARPER: That was the term used of certain teachers appointed to give half the regular instruction, the supposition being that the person so engaged was devoting the other half to investigation or research. The person so designated received the fees of any student who might come. It was understood that the courses offered were courses of a high grade. The experiment has not been very successful. It has really meant only that a person has held that position one or two years, until a higher appointment could be got. There has not been any very satisfactory result, perhaps because we did not give it a fair trial, and we have fewer of those appointments today than we had five years ago. They are entirely independent of the professors in the sense that every instructor is independent. Very few applicants for the position of docent have been refused the appointment, but not many have made application, for very few have been able to sustain themselves financially while doing the work.

MR. HADLEY: I should be glad to ask Mr. Hall if he can furnish any information on the question whether the *École des Hautes Études* has in fact had the degree of success which we should have expected from the principles on which it was organized. In one or two instances of which I know the progress has been so distinctly outside that scheme as to be rather adverse to it. I do not wish to close this discussion without expressing my appreciation of Mr. Munroe Smith's remarks. It is a very illuminating discussion of the matter under the view in which he brought it up. I should like to ask whether Mr. Munroe Smith's suggestion is not based on the thought of the new direction in which the student is going to develop. For instance, in Germany in the fifteenth century, in the time immediately preceding the Reformation, things were almost exactly in this state of doubt: Professional schools were considering whether they should require the Bachelor's degree as preliminary to entrance. The whole condition of the course in arts was under discussion in almost exactly the way it is now, on a somewhat lower level in some ways. In Germany they

formed higher requirements for theology, law, and medicine, and that crowded out the arts, so that the old arts course became the department of philosophy, of which the only record is found in the fact that when you get your degree of Doctor of Philosophy you get your degree in arts too—a sort of appendix which may have had use in times past, but does not now. On the other hand, in England the opposite result came about. The professional studies, as far as they were retained, worked into the arts course. Instead of working on top of it and crowding it out by pressure from above, they worked into it, and so far as they exist they form part of the arts course. The German university undoubtedly today is a result of that development, and gives a much more fit preparation for special work; but the English university, I am inclined to think, gives a correspondingly better preparation for general citizenship than the German university. Here in the United States, above all things we need the preparation for scientific progress, and we need the preparation for general citizenship.

MR. MUNROE SMITH: I should be sorry to give the impression that I am attempting to forecast the future with any assurance. I have simply indicated certain tendencies that seem to be working themselves out. In describing the condition of things in the fifteenth century and the line of development which followed, Mr. Hadley has shown that all the avocations which were at that time regarded as professions were put upon the basis of that preliminary training which we call collegiate and which the Germans call gymnasial. The situation today is different in that a larger number of avocations are beginning to enjoy that social esteem which has always been accorded to the professions, are coming to represent as definite a body of knowledge, and are requiring as definite a preparation as any of the older professions. So I hardly think they can be eliminated from our forecast of the university, as they were eliminated under very different conditions in the fifteenth century.

As to England, it seems to me that the great misfortune that has overtaken English university education is that they have had nothing to do with anything so sordid and mundane as the professions, except the clerical profession. For instance, in my own field, it was because the universities absolutely refused to have anything to do with anything that was so uninteresting and unaesthetic as the English common law, because they would not teach anything but the Roman civil law, that they lost their hold upon legal education. Curiously enough, the same mistake was made all over Europe. The universities refused to have anything to do with the barbarous usages which were called national law. As late as the eighteenth century the chancellor of Frederick the Great, who had been charged with the preparation of a civil code, said that he paid no attention to that thing which sundry *Privatdozenten* had taken the liberty to invent and which they called German law. There was exactly the same development in Spain: the universities would not teach Spanish law, though they were repeatedly ordered to do so—by the resolution of the Cortes; consequently academies of law were developed which were simply independent law schools.

In this country there are so many conflicting influences at work that it is impossible to say with any assurance what the development will be. It seems to me, however, that there is nothing in the past history of education to indicate that it is other than probable that the greatly widened list of professions which we are recognizing now will ultimately all be placed on the basis of a certain amount of liberal training. When Mr. Hadley says that such a forecast seems to imply the disappearance of the college, I can only say, I hope not. I do not think anybody feels more clearly than I do the great value of the American college as it has developed. I hope that the American college

can be preserved, not so much by dissociation from all other departments of the university, as by close association with them.

MR. ELIOT: I am a hopeless heretic on this question of a division between college and university. I do not know any other way of determining bounds of education except by the study of the human being on whom education is to be delivered.

Now, in the education of every one of us there is a demarkation; there are two stages. In the first place, the stage of what we like to call general culture, which is a sampling of the different kinds of knowledge—that is the schoolboy stage. It is highly expedient, it is necessary, it is permanent. We can do as much prophesying as that. We know that every boy and girl that comes forward should go through that stage. If there is no sampling, the discovery will not be made, the true conclusion may be missed. That is the school stage. In most of our colleges it runs straight through the college. When I was in Harvard College, it was a school and nothing less, in that sense. We were all of us trying to find out what we were going to be fit for by sampling different knowledges, and not one of us got beyond the elements of knowledge. It doesn't make any difference whether a young man is doing that until he is twenty-three in an American college, or does it only until he is seventeen and leaves an American school; intellectually he is a schoolboy as long as that process lasts. Now, when he has sampled knowledge enough to know what he is fit for in the world—which is the same thing as saying when he has found out what he wants to do in the intellectual career—when he has found that thing out and begins to work in his line, he becomes a university student. He is fit for freedom, and he must have freedom. He cannot pursue this line without freedom, and the institution or set of institutions which serves him is the university. And there is nothing between—nothing. The mere limitation of age or the determination of a residence is not substantial. The substantial thing is this period of sampling followed by the period of freedom and pursuit of a line or career.

The next thing I should like to say about the college and university relates to the organization of the teaching institution, adapting itself to these two stages of the progress of the scholar. I do not discover anything real and substantial in our organization of either college or university except the department, the organization of the department of teaching and learning. That is what we are organizing at Cambridge, and have been for the last thirty years, and we see perfectly clearly that that is a real bit of permanent organization. To illustrate what I mean by department, I will take the law faculty. That body is called a faculty—that is the tradition. It is nothing in the world but a department, and our law faculty is strictly comparable with the group of our teachers of history, or with the group of our teachers of chemistry, or of philosophy. They are all men acquainted with the law field—some better in one part of it, some better in another part of it, but all men in that one field. I believe that there is no durable, forceful organization except the department. I will not call it university organization, because it should run right down into the secondary schools, where the organization should become more and more departmental. The department is an effective thing in all sorts of ways. It is the only body capable of laying out a series of courses in proper comprehensiveness, in proper sequence. A college faculty never can do that in the world, in any department. What we call the University Council can never do it. The men do not know each other's fields. The historical professor is good for nothing in laying out a sequence of courses in physics, and *vice versa*. The department which has the real knowledge and the real power to do it is the real thing.

The department is always interested in providing what I have called sampling courses. They are necessarily elementary. They are interested from the most natural of motives, namely, they want to catch all the young men that are good for their department.

Now, with regard to the selection of teachers for the university, there is only one source of true selection, namely, the department. Take, for instance, what we call the law faculty. Every man in that department knows all the young men that are coming up fitted to teach and who are promising as teachers. The recommendation of the law faculty is conclusive with regard to the capacity of candidates for teachers' places.

Then I should like to say something about professional education. Professional education is necessarily departmental education. It runs in certain grooves and sequences, but I think we can see clearly that the old distinctions between learned and unlearned professions are not only rapidly disappearing, but also that they have no foundation. They have no foundation in any distinctions of culture, or broadness, or narrowness. The professions are coming to be all alike in liberality in regard to social standing. What changes we have seen in our lifetime with regard to the social standing of the professions! I have personally witnessed an extraordinary decline in the social power of the ministry, and an extraordinary rise in the social standing and influence of the physician. I heard a governor of Massachusetts say one day at Exeter Academy that the coming professional man whose influence is to be greater than that of any other is the engineer. He was a lawyer by profession.

I think the example of the English college has led us completely astray with regard to this training for citizenship. The English colleges may be said to have abandoned professional training.

I see no connection between our problems and those of mediæval Europe. We have broken with mediæval Europe; we are living in an entirely new age since the beginning of the nineteenth century. There is not a subject taught in our universities which is taught in the same way or from the same material that the eighteenth century used. There is no profession whose manners and customs are at all the same now that they were in the eighteenth century. Here we are in this epoch of the manufacture of mechanical power which Mr. George Morison has told us of. It is as much a new epoch as the epoch of fire compared with the epoch before fire. It is tremendous in its civilizing, developing tendency, and I do not think we can learn much from the history of the mediæval institutions, or from those existing institutions which remain mediæval.

We are getting sequences of courses now at Cambridge of from two to seven years. And I need not say that that is the way to train real scholars. It is the sequence that is important, within the same department. That is what makes the freedom of election safe. There are but two stages—the stage before the student has found out what he is fit for, and the stage after. One is a school and the other a university.

MR. HADLEY: On what basis would you determine what constitutes a department? There are certain broad lines. For instance, language is a separate department from other things, but within that, where would you draw the line? How far would you separate history and economics? How far would you separate chemistry from physics; and, if you separated the two, would you still further, within physics, make a separation?

MR. ELIOT: It seems to me to be determined entirely, if rightly and wisely determined, by the common knowledge of the men associated in the department. It is no use to have a depart-

ment in which the men have not common knowledge. At Cambridge we have found it useful to have another group which we call a "division," which may consist of two or three or four departments, that division, however, having a large amount of common knowledge which they find it profitable to exchange. I will illustrate that with our Division of Modern Languages—English, German, the Romance, including of course the French as a large element, the Celtic and Scandinavian, the Spanish and Italian. Now, the important unit is the department, but the division comes together occasionally for mutual consultation and comparison, and a good many men are keenly interested in two or three of these departments. To illustrate again, we have a Division of History and Political Science, and that includes two departments, one called History and Government, the other Economics.

I do not think we have yet found out quite what the expedient limit of each individual group is; we are rather experimenting on it. Should it be the full professors, or should it include the assistant professors? We include assistant professors. Should it include instructors appointed for a longer term than one year? Most of our departments include these gentlemen, but not all. None of them has yet included the annual appointments. They are not summoned to department meetings except sometimes to make plans or give advice; they are not members.

MR. SHOREY: President Eliot's definition of sampling from the point of view of the department by a curious coincidence is identical with Plato's definition of sophistry; that is, fishing or hunting with intellectual bait for desirable young men. With this somewhat pert illustration I mean to raise a real problem. President Eliot assumes that the process of sampling is inevitably successful, and further assumes that its only object and final goal is the selection of a specialty. How would he meet the question: What if the specialty is selected prematurely? Suppose a boy is led in his sampling to select chemistry as a specialty in the first year of the high school. The sampling process evidently would not stop at that point; it would go on. It would not be sampling then any longer; it would be general education. The idea of general education as preceding professional education remains. I do not think it can be escaped by a change of terminology or by the metaphor of sampling.

MR. ELIOT: If I understand Professor Shorey, I think there is value in the school as an organization, as guaranteeing tolerably well the sufficiency of the sampling. School organization is very different from university organization; because it is intended to secure an adequate sampling. I think it protects the youth pretty well against too early choice of a career. But that school life is, in the extreme heterogeneity of our education, often prolonged much beyond the ordinary school age. I have known graduates of Harvard College not to know at all when they graduated what they were fitted to do or what they wanted to do. They were still in pursuit of their career. Until they have chosen their career they are not university students. That I suppose to be the fundamental difference between a university and everything that goes before it. Of course, we have been in the habit of using the word "college," but generally, at least in times past, that meant nothing but a school in which the sampling process was going on. President Hadley pointed out very clearly, and so did President Jordan, that in most of our present colleges we have in what we call the same course the schoolboy and the university student; and nothing can more perfectly illustrate the impossibility of separating the college from the university by the grade of the teaching that a given student is taking than the list of courses of instruction given in Harvard College, which appears every year in the Report of the Dean of the Faculty of Arts and Sciences. There the name of every

course is printed and the make-up of each class. You will find that most of the elementary courses contain graduates, Seniors, Juniors, Sophomores, Freshmen, special students, scientific students, divinity students. That is to say, in any particular course there is absolute confusion between the college and university student; and I think this must be the case in all the universities here represented. You cannot separate the schoolboy from the university student in the elementary courses of instruction now given in our institutions. I had occasion to point out not long ago that in the seminary courses, so called, at Harvard, one-sixth of all the choices were by undergraduates in Harvard College, and they were among the most competent students in those seminaries. That is, there is nothing which discriminates between the two stages in the particular courses of instruction offered in any of our schedules. The same course may be taken by a large number of men who are in the sampling stage, and a large number of men who are in the university stage. Of course, they are taken with different motives, but there is the greatest possible mixture of what we call college men and university men in all our courses of instruction; and that mixture, it seems to me, must continue for generations, because of the very heterogeneous condition of the secondary schools in our country.

MR. WEST: I wonder where President Eliot would get his argument for the college as an American undergraduate institution, if the sampling is concluded at the end of the secondary-school stage, before the student gets to his undergraduate collegiate course. Commonly he discovers by the end of the school course what he is fitted for. He is fitted for law, let us say, or medicine; and if he wishes to enter either of these professions, what justification would there be, on those lines, for insisting that he should take a college degree before entering the professional school?

MR. ELIOT: That is a very interesting question, indeed, and the future of the college hangs on the answer to it. Given a boy who on graduating from his school sees clearly what he wants to be in the world. I believe it to be to the interest of that boy, before he enters a professional school, to give several years to studies fundamental to his future calling; and there are such studies, which logically precede the professional school studies. For example, our law schools are very strictly schools of training in the English common law; they call it court-made law. Our law schools exclude all underlying matters; therefore, if a lawyer is to get an adequate training in history, in economics, in government, in French, in Latin, he must get it somewhere between the secondary school and the law school. He will get it in what we call college; only I doubt if that name is used many generations more. He will get it at the university, but there will be for him a group of preliminary university studies preceding the strictly professional studies. I believe that to be true with regard to the basis of preparation for all professions; therefore I believe the intelligent American youth will not go straight from the secondary school to the professional school. To help him avoid that danger, I approve of all universities insisting that he shall have the degree of Bachelor of Arts and Sciences before he enters a professional school. That is what we have done at Cambridge, and I hope that practice will soon become the practice of all American universities.

MR. WEST: Then for the majority of students, or at least half of them, who are not going to take professional studies, but who have finished the school sampling stage, we have one problem for the organization of the undergraduate college or liberal studies, and another for the men going on to the professions. It seems to me the argument for the liberal studies underlying the professions, which I can heartily sympathize with, is open to the criticism of providing for only a portion of the

university undergraduates. And even for the portion for which it makes provision, the boy who knows he is going into law or medicine, it seems to me that the whole constitution of the undergraduate courses in liberal studies for the Bachelor's degree of whatever kind is apparently, then, open to be regulated, I will not say now whether by university prescription or by moral suasion, or other inducements that may be applied to the student. We should have certain undergraduate university courses in liberal studies, not professional, but preliminary to professional; and for the majority of students I do not see where we get our line of organization for any other college course.

MR. ELIOT: I am glad Professor West has called attention to the fact that probably a minority of university students go into what we call the professions. I suppose that is quite correct. I know that last June a majority of all the graduates who took the degree of Bachelor of Arts went into business. What are they going to do? Some of those men are the individuals who have not finished their sampling process until they are twenty-two or twenty-three years of age. Of course, those are the less fortunate men who have not seen their career early enough to get the benefit of it at college, but some of them were perhaps aiming at business during their residence at the university. Now, there is going to be special provision in our universities for just such men. We have seen a rush among some of the western universities into the commercial schools. They have actually set up separate schools under that name, or schools of commerce, here within five years. What is the reason for this manifestation? I believe it to be that business itself is becoming, for all its leaders, an intellectual calling, with its own ethics. It was mentioned today that the ministry and law and medicine were professional because they had their own ethics—a very just observation; only you must extend that to every profession, including business. Business must have its own ethics, if it is to be successful; and so must engineering. Plenty of chance for the development of peculiar professional ethics in all these callings; plenty of need of it. Business itself is going to be an intellectual calling, for the leaders of course; therefore three or four years of university study are the appropriate preparation for that calling, too.

THE THIRD SESSION

THE ADMINISTRATION, FINANCIAL SUPPORT, AND DISTRIBUTION OF UNIVERSITY PUBLICATIONS, INCLUDING JOURNALS AND DOCTORS' DISSERTATIONS

PAPER PRESENTED BY CHARLES M. BAKEWELL, OF THE UNIVERSITY OF CALIFORNIA

The specific questions put in the topic before us, as formulated by the Executive Committee of this Association, clearly imply a change in the attitude of the universities as regards the publication of the results attained by their own members. Under the older order these questions would hardly arise. The scholar who was a successful investigator was the exception rather than the rule, and he had to find a publisher as best he could.

He might apply to the journals in his own line, or to the various academies of science; but if, for any reason, these channels were closed, he was forced to seek a patron, or to pay for the publication of his results from his own slender income, since the results of research rarely have a market value. Even the scientific journals were, and still are, in large measure philanthropic enterprises, supported by private munificence or by the generosity of one or more contributing universities.

Recent years have witnessed a change in the conception of the functions of the university, or, to speak more accurately, a change in the emphasis of existing functions. It is now quite generally admitted that the university is not solely, or even primarily, a body of teachers. It is also, and chiefly, a body of investigators. And while there will doubtless always be room even in the most advanced universities for men of thorough training, but little originality, who are gifted with a special genius for teaching, the *university* atmosphere is created by those who are inventors as well as transmitters, who teach, to be sure, but who derive their inspiration in teaching from the zest of discovery.

But along with this change goes the corresponding obligation on the part of the university to contribute of its funds far more generously than it has in the past for the publication of the results of its workers. If it is desirable to get results, it is necessary to make them tell; and results are of little value unless made available by publication. In many lines of investigation the existing channels of publication are already inadequate for the material at hand. And this situation will grow worse rather than better as time advances. It will become increasingly difficult for the investigator to find ready and prompt means of publication.

There are two obvious ways out of the difficulty with which university workers are here confronted. (1) The existing channels of publication might be concentrated, and their facilities greatly increased by the liberal support of all the large universities. A sort of university publication trust might be formed. There would be many economies, and some advantages in the way of distribution, if such a course were followed. But there are many difficulties in the way. One of the largest items in the regulation of the net cost of publication is the value of the exchanges which the university receives therefor; and it would be difficult to receive this return under such a plan. It would be hard to eliminate altogether the rivalry and jealousy of the different contributing universities in the allotment of space and the determination of the order of publication. Again, many of the larger universities would find it impossible to enter into any such arrangement. Particularly would this be true of the state universities. These can appropriate funds for publication done by themselves, but they will not make any significant contribution to independent journals, or co-operate in any effective way in the maintenance of common series. But the chief objection is that the universities, by following this plan, deliberately relinquish one of their most efficient means for the promotion of research. This means is supplied by the second method, to which I now turn.

(2) Each of the larger universities might go into the publication business on its own

account, and establish, maintain, support, and distribute its own scientific series. This method would meet the need occasioned by the inadequacy of present facilities, so far as that need exists, quite as well as the former method, and it would also possess certain peculiar advantages of its own. It would obviously afford the best possible opportunity for the ready and prompt publication of results. Such university series would constitute the newspapers of science. Moreover, should this method be generally adopted, no better means could be discovered for holding the universities up to a high standard of scholarship. Each university's reputation would be an open book. The extent of its activity, and the quality of the work done, would be patent to all. But the chief advantage would arise from the fact that the existence of such series in a university would prove a potent stimulus to creative activity on the part of its teaching staff, and at the same time furnish to the graduate students a valuable incentive to take their places early in the ranks of investigators. And this would perhaps be the chief return to the university for its support of publications.

However, this way is not entirely free from objections. It has been urged that it is not to the scholar's advantage to publish in the series of his own university, which will mean, if not burying his work, at best publishing it to a limited circle, and that a circle that does not include those whom he is most anxious to reach. This is a difficulty which time remedies. It is no doubt felt at the start, but its force weakens with each number issued, and with each series established. Let the quality of the work recorded be of a high grade, and independent university series will receive general recognition, and take their places in the learned world on their merits. It is here assumed that proper measures have been taken to secure as wide a distribution as possible of these serial publications. And, it should be added, the establishment of such series should in no wise constrain the individual worker to publish his results therein when he may deem it to his advantage to publish elsewhere. It will perhaps be urged that the adoption of this method would result in the unnecessary multiplication of books. These series must be kept going; there will be a temptation to pad; and they will be turned into waste-baskets into which will be tossed material not quite good enough to hold its own in the common journals. Occasionally an editor might be inclined to yield to this temptation, but since the public he wishes to reach is a critical one and is not likely to be bamboozled by bulk, he may be trusted to hold himself in check, and to pride himself on the quality, rather than the quantity, of the work that a given year may record. Besides, a further safeguard against this misuse of opportunity would be afforded in the necessary limitation of the funds available for any one series. The objection on the ground of expense will be considered later.

But no plan can be devised in the abstract that will fit all the facts. There may well be certain subjects in which it would be inadvisable for any university, no matter how well manned and equipped, to undertake to run independent series. The pressure that calls for the establishment of such series is doubtless most strongly felt in the case of those natural sciences in which there is still a large amount of cataloguing to do, or which offer the

greatest variety of questions for research. In some of the more abstract sciences where original contributions will, in the nature of the case, be of rarer occurrence, and generally brief when they do occur, this pressure will not be felt. Possibly physics and mathematics fall in this category. Again, in some subjects, such as history and economics and the literary division of philology and, possibly, philosophy, it may be desirable that the results of scholarship should always reach a large non-academic public, which it would be practically impossible for separate university series to do. In such cases it may be held, though I think with doubtful wisdom, that the advantages which these series would offer in the way of a stimulus to creative scholarship would be more than outweighed by the disadvantages in other directions. It may, however, be true that the best results can be attained by combining the two methods mentioned above: by establishing independent series in some subjects, and in others pooling interests.

The experience of the University of California in the matter of publications has been almost exclusively in the line of the second method that has been outlined above, and it is in the light of that experience that I shall now briefly touch upon the special subdivisions of the question before us. In referring to our experience I do not in the least pretend that our plan furnishes a model for general adoption. It is doubtless full of defects, and is, in many respects, a tentative scheme. But it constitutes California's contribution to this discussion.

It is now the established policy of the University of California to institute separate scientific series, whenever the contributions promise to be sufficiently numerous to keep them alive, and whenever, also, either the facilities offered by the existing scientific journals and by the proceedings of the various learned societies are inadequate, or the investigations are of such a nature that the opportunity for immediate publication seems desirable, or it is felt that the time has come to make use of them in promoting scientific research. In addition to its publications in astronomy and agriculture, which are provided for by special appropriations and distributed gratuitously, the University of California has established series in American Archæology and Ethnology, Egyptian Archæology, Græco-Roman Archæology, Botany, Education, Geology, Pathology, Physiology, and Zoölogy, in addition to its Anthropological Memoirs; and others will shortly be added to this list.

The plan of administration is very simple. This department of the University's activity is under the general supervision of a publications committee, which determines all questions of form and policy, has authority over the allotment of funds, and settles questions of precedence in the use of the somewhat limited facilities of the University printing-office. In case of conflicting interests, it aims to secure fairness to all concerned. It also attends to the business management, to the advertisement and distribution of the publications. The burden of this work falls mainly on the secretary of the committee, who has the assistance of a clerk for a few hours each day. Our present secretary is a member of the teaching staff, and, in addition to his duties in connection with the publication department, offers one course of instruction. This arrangement works very well at

present, but it will not be long before it will be necessary to employ an officer who shall devote his entire time to this work.

The publications committee aims to introduce as much uniformity into the plan of publications as is consistent with the recognition of individual needs. The questions it confronts are, for the most part, not questions of vast moment—mere machine-shop—and their discussion is tolerably tedious; but what committee is not in the same sad case? It is “the king’s service,” and that is the end of the matter. The central publications committee, in its deliberations, has ever in mind the interests of the University at large, and the convenience of the general scholarly public. It does not assume any censorship of the work published in the several series. The editor of each series, or the board of editors, has full control over its contents, and is responsible for the quality of the contributions.

The numbers in the several series appear at irregular intervals, being published whenever material is on hand. Thus of a particular series there may be many, or few, or even no numbers published in a given year. It is essential to the success of a system like this that there should be no law, written or unwritten, compelling publication of definite quantities in stated periods. The successive numbers are, however, gathered into volumes whenever a certain size has been reached. The unit of length will, of course, vary with the nature of the series. In our own case it runs from two to four hundred pages. Whenever a series is of such a nature that it can thus be chopped off in stated unit lengths without inconvenience, and where the cost of printing is fairly uniform throughout, a maximum of simplicity is attained for administrative purposes. The price per volume can be uniform, and the series can be marketed precisely as the various scientific journals are. In some cases, as in archaeology and anthropology, we have found such a simple system altogether inapplicable. No unit length can be maintained, and, owing to the extreme variation in the cost of printing, no fixed price proportionate to the size of the volume can be charged. This is a slight disadvantage in the matter of distribution, in securing subscribers, but it cannot be helped.

I fear these details are somewhat wearisome. I have introduced them merely in order to show that a university can accomplish much in the way of publication with very modest machinery and a very simple plan.

The University of California has had no experience in the maintenance of general journals, and does not favor their establishment. But its system of publications has been found to contribute toward the solution of the special problems presented by Doctors’ dissertations: and to this subject I now turn.

The requirement of the publication of Doctors’ dissertations, which is now quite general in American universities, has but one adequate justification—the belief that such dissertations should not be accepted unless they show a distinct contribution, however modest, to the sum of human knowledge. They are to be published because they are worth publishing. Reasons which justify a university in undertaking to publish the results

attained by its staff of instruction justify it also in publishing the dissertations of its Doctors. The university reaps its share of the benefit.

Of course, a dissertation is primarily the property of its writer, and he should always be free to publish it wherever and in whatever way he may think most advantageous to him. He may prefer to publish it in some outside periodical, or in the transactions of some learned society, or he may wish to publish it in book form and place it on the market under the usual conditions. And, on the other hand, it is of little advantage to the university, and it is certainly not desirable from the point of view of the writer, that the dissertation be published as a detached product, a separate monograph, apart from any journal or any regularly constituted university series. Such a procedure would simply mean giving the dissertation decent burial. This is the fate of many a dissertation "made in Germany." A number of the German universities send out yearly dissertations by the hundred. Many of these are of little consequence, and the valuable ones are lost in the heap. Everyone who has worked over the dissertation output will recall how much time he has wasted simply in discovering the dissertations in a given subject, how much more in finding out which of these can safely be ignored, and how much more in getting at the kernels of value in the saving remnant.

If, however, the Doctor's dissertation were to be published in a series under the responsible editorship of some prominent investigator, all this would be remedied. There would be an additional safeguard against the granting of the degree on insufficient work, for the editor will assume a fuller share of responsibility for the value and accuracy of the work than he is willing to assume merely as one of the professors in charge of a candidate who is to publish his results independently. That this method would give greater convenience of reference is obvious. And it would also insure the condensation of results, for it would be necessary that they should be reduced to as compact a form as possible in order to make them available for such serial publications.

In this connection we might add that it is perhaps unwise that universities should require the dissertation to be printed in precisely the form in which it is accepted. Certainly many dissertations are, at present, much longer than there is any necessity for. A certain amount of expansion, which does little more than give evidence of a writer's acquaintance with what has already been accomplished, even though the exhibition of this fact be in no wise indispensable to the presentation of his own independent results, may be tolerated in a dissertation that is to appear as an independent monograph, although even then such a procedure is very much like publishing the results of written examinations. The *fostering mother* may wish to be enabled in this way to point with maternal pride to her boy's past record, but it is an insufferable nuisance to the indifferent public beyond her threshold. This nuisance would certainly be abated if dissertations were to appear as numbers in regularly established scientific series.

But what shall be done with dissertations that cannot find a place in any regularly established university series? I answer: The student should be urged to seek, and should

be assisted in seeking, the opportunity to publish through regularly established channels of publication outside his own university. This is frequently done at present. If, however, it were generally recognized as desirable that Doctors' dissertations be published in scientific series or journals, a change in the form of dissertations presented would soon be manifest. Candidates would from the first be urged to make their work compact, to introduce no more material than is absolutely necessary to bring out the substance of their own contributions. The time might even come when we should hold the best dissertations to be the briefest dissertations. There would be exceptions, but then the exceptions would only the more forcibly prove the rule. How many a dissertation now appearing buries a valuable, though modest, contribution in a showy bulk of irrelevant or needlessly expanded matter! Yet how much more worthy of the Doctorate is the one who saves words than the one who wastes words! The art of condensing is rarer, and far more difficult of attainment, than the trick of expanding, and it should be encouraged in our coming investigators. If this were generally done, if a meaty three pages passed muster and the same substance diluted through three hundred were refused, the time would come when Doctors' dissertations would not be the drug on the market they now are, but would as a rule be available material for the various journals and scientific series. And the gain to the cause of scholarship would be incalculable. I conclude that our main difficulty with Doctors' dissertations arises from the fact that we allow ourselves to be imposed upon by the monograph idea—a strictly mediæval inheritance, which we cling to partly from the inertia of use and wont, and partly to flatter our academic vanity. Should we modernize them, should the candidate be required to aim at conveying his actual results with the least possible demand on the time and energy of his reader, their publication would, in most cases, offer no special problem at all.

There will, however, always remain some cases in which dissertations will inevitably be bulky, and expensive to print, and unavailable for use by any serial publication, and will have to appear as separate monographs or books. With regard to these I can only say that the free publication of a dissertation should always be looked upon as a compliment to the candidate, and a university by publishing some, or most, of its dissertations by no means assumes the obligation to publish all. Nevertheless, a university can always afford to be generous, and to give aid in such exceptional cases as these whenever it is possible to do so.

Distribution is an essential part of publication. Results are certainly not published by the mere fact of printing. And how to secure the proper distribution of university publications is a difficult problem. It will at once be evident that this problem is materially simplified if these publications are gathered by subject into definite and distinct series. These series then make their way as wholes, just as journals do, and the problem of their distribution is the same as that of the distribution of journals, rendered a little more difficult of solution, perhaps, by the fact that the number of contributors is limited, and by the further fact that the separate numbers do not appear at stated intervals. But such

series, like the journals, make their way ultimately by the value of the contributions, and not by the number of the contributors, or the number of contributions per annum. And separate university series, if that method of publication were generally adopted, might even have an advantage over the journals in the fact that one could in them find a fairly continuous and complete record of the work of certain prominent investigators.

The methods to be employed are then simply the methods of successful advertising. Subscriptions and exchanges must be solicited in the usual way. The publications being serial, each number helps to advertise and carry the other numbers of the same series, and each new series established helps to carry and advertise the rest. It would probably be wise to send each series free of cost to scholars who are themselves pursuing investigations along similar lines. In any case the publishing university must look for its direct returns mainly to exchanges received, and to the subscriptions of interested dilettanti and non-productive students; and these sources will in most cases be found sufficient to pay for the cost of publication. A practically insoluble problem is presented by scattering publications and floating monographs, and these should be discouraged.

I come finally to the question of financial support, and again I speak with special reference to the plan pursued at the University of California. At first sight the policy of maintaining independent university series seems too expensive to admit of any general adoption. Yet the actual expense to the university undertaking this work is nothing like so great as at first appears. The net cost of publication is soon materially reduced by the direct returns received in the way of cash subscriptions and exchanges.

Our plan has not been in operation long enough to enable us to determine with any degree of precision the possible extent of this reduction. But perhaps our experience with the series that has been longest under way (if we except those in astronomy and agriculture, which are distributed gratis) may throw some light on this point, and be only the more significant because the history is brief. Our publications in geology have about completed their third volume, having been under way since 1893. The average cost per volume of 450 pages has been approximately, including plates and postage, \$1,150. It is difficult to ascertain with any degree of accuracy the cash value of the exchanges received by the library, and still more difficult to apportion this amount among the respective publications. I have, however, gone through the exchange list in the endeavor to estimate the value of the exchanges received which may fairly be placed to the credit of this series, and have found it to be about \$340 a year. This would mean \$680 per volume, supposing a volume to be completed in two years, the minimum record for this series. To this should be added for cash subscriptions, and sales of separate numbers, \$300 per volume. Thus the net cost to the university of maintaining this series would be but \$170 per volume, or \$85 a year.

Our other series would not make so good a showing. They have not been established long enough to form any basis whatever for an estimate. Even had they been running as long, the figures would doubtless be quite different, since no two are precisely in the

same situation. It is, however, perhaps not unreasonable to expect that most, if not all, of these University series will, when well under way, prove practically self-supporting.

Or, to put these results in another light, the bulk of the money spent on university publications should be regarded as a library appropriation, the remainder being wiped out by cash returns.

The actual burden to the University is, however, somewhat greater than the figures given would indicate, for doubtless many of the exchanges received would not otherwise be purchased by the university library; yet all have been figured in at their original market quotations. Furthermore, in estimating the gross cost, the salary of the secretary, or administrative officer, has not been taken into account.

Still, when all allowances are made, it yet remains true that the net cost of maintaining separate university series is not large enough to cause any grave apprehension. And the amount that is involved should be looked upon in the same light as money spent in the equipment and maintenance of laboratories. The university press is the natural complement to the machinery of research, and, as such, is entitled to the university's generous support.

DISCUSSION OF THE ADMINISTRATION, FINANCIAL SUPPORT, AND DISTRIBUTION OF UNIVERSITY PUBLICATIONS, INCLUDING JOURNALS AND DOCTORS' DISSERTATIONS

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. MAGIE: There is one point which was not touched on, I think, by the gentleman who read the paper, which in some particular respects is a very important one. That is, the difficulty which arises in any particular science on account of the multiplicity of publications, which, while advantageous from many points of view, is, on the whole, a very unfortunate thing. As it is now, even in a science in which so little is published as in physics, to keep up with the publications in the important journals requires much work; and if we had to examine the university publications of a dozen, or a hundred, universities in this country besides, before we ventured to say that a thing had or had not been done, our labors would be very much increased. Any plan which is to be adopted, at least for sciences of that sort, must involve a very considerable concentration, and merely for the sake of the worker in the science it would be better if we could have two or three responsible boards of editors who should reject a very large amount of material offered for publication. That will never be done; still I think it would be a great deal better if it were done.

MR. SHOREY: I should like to ask whether the University of California rejects the idea of requiring the student himself to publish.

MR. BAKEWELL: That is a matter of courtesy. The student has to publish, unless the material is available for one of the publications of the University.

MR. HARPER: I should like to report briefly for the University of Chicago. With a great deal of the paper I think we are fundamentally in accord. It was indicated at the beginning of our work that every department would be expected to do work of publication, and certain general rules

were laid down. Those rules and regulations have been followed quite fully during these years, and I think I am right in saying that no part of our work has been more satisfactory to the men, from the point of view of investigation, than that which has afforded opportunity for publication. Some of the departments chose to establish journals, and there have been twelve or thirteen journals established. Others, the classical departments for example, chose to establish studies. Our custom has been in the case of these journals to estimate what each would cost for the year, and the receipts from subscriptions and from advertising, and to provide a subsidy for the balance. We have been very much gratified every year to find that the amount of subsidy needed has diminished, and we look forward to a time when the journals and studies will be self-supporting.

We have had a good deal of trouble in connection with the printing of Doctors' theses. We found that, while we professed to print the Doctors' theses, a great many Doctors, especially of the earlier years, did not get their theses into proper form. Only recently a professor in one of our eastern universities, who has achieved high rank in his department, petitioned the faculty to be excused from printing his Doctor's thesis. He is not willing to print it now that four or five years have passed; but if he were to prepare a thesis now, it would not be a Doctor's thesis. That is a serious question. It seemed to me that one of the best points of the paper this afternoon was the justification of printing of Doctors' theses by the university, thus putting the Doctor on the same plane as the other officers of the University.

I think the point made by Mr. Magie is an excellent one; yet the question suggests itself: Do we wish to stimulate production, or not? If it is to be stimulated, without question there will be much produced and much printed that does not deserve to be produced or printed. But in the much that is thus unworthy will there not be found probably enough to justify the whole expense, whatever it may be? Is it not true that many of the younger men, especially if they have an opportunity—if they know their work can be published when it is ready—will do work of a high order which perhaps they would otherwise not do? Of what value is research or investigation in any case, if it is not published in some form or other? We have found it wise and beneficial in many ways to practice co-operation; that is, several of the departments co-operate with the departments of other universities, as for example in mathematics. It is also true that some of the departments have published independently of the University, that is, the heads of the departments have been editors of journals, so that these journals were issued without any reference to the University. We have thus practiced four different plans.

MR. HALL: Our experience in publication, has been as follows: We have now five journals, and we have learned that even a scientific journal, if carefully edited, can be made self-supporting. None of our journals ever had any outside aid, and I am happy to say that every one except the latest is now more than self-supporting, and that, too, without the aid even of advertisements.

Another important matter is the use of exchanges. One of our journals has no less than 180 exchanges, and of these one-third are standard publications, which the Library purchases at the lowest rates. But, besides this one-third that the University Library pays for, we get twice as many more, for many of which, perhaps, we should otherwise have subscribed and for many of which we should not.

In regard to book exchanges we have had this scheme: We agree to give brief notes, perhaps a line or two, at any rate to print the title, of any book sent in the departments represented by the journals, and in a great many cases we add just a note or two, perhaps a whole title-page, perhaps

the headings of the chapters or something else, and we find that publishers are very ready, indeed, to send on a large number of books. I suggested this at a meeting of college librarians a month ago at our institution. There were no colleges represented there that had exploited this scheme to any extent at all, and some of our largest colleges were represented. I would venture the rough statement that probably four or five hundred books, such as they are, come that way; some of them of little value, text-books and school-books, and some of the very highest value. Some of the largest houses in France and Germany, and a few in England, send us gratuitously almost everything that is connected with those journals, and they are perfectly satisfied to have us print these brief notes. These books are a very important addition to the Library.

As to the Doctors' theses, it is very easy to take a rather pessimistic view. I had a while ago a publication, I think you all know it, of a bookseller of Leipzig, in which he offers to sell for a consideration some three thousand Doctors' theses. Although very often the Doctors' theses, especially in professional schools, have little value, nevertheless often they do have some value. But if we had a method of condensing, and printing always a brief extract, a page or less, of everything, it would aid. It seems to me that the library must play a great rôle in the university of the future—to feed the specialist. He wants the latest thing and he must have it, if he is to be saved from duplicating work that has already been better done elsewhere. He cannot possibly get it unless we develop another function, I do not know what to call it—of the "library feeder," perhaps. We have done a little in this line. I presume we have fifty bibliographies on special topics, where we have tried to overcome all obstacles and bring these things together. It is of no use to inveigh against the multiplication of these things; it has got to come, and we have got to adjust ourselves to it. I have no doubt that fifteen or twenty years hence publications will be multiplied perhaps tenfold, and we have got to meet the emergency, or else we shall be swamped. To print the Doctors' theses seems to me a necessary thing. I do not see the harm in encouraging the young man to print early, because it seems to me that it does not give him an unwholesome self-consciousness. Some institutions take a very different view. Some of our largest institutions have given the Doctor's degree on dissertations, for instance in my department, which it is impossible for me to see. No way that I know is provided for me to see these dissertations. I have two instances in mind now, and have had others before, where a dissertation has been written in my department of investigation which I should very much like to see. I have not time to go to the institution where the dissertation was written, and when I ask: "Can you let me see it?" I am answered: "No, the Library rules forbid my getting it out." They may of course say: "It is none of your business what work we do here or what our degree represents;" but I submit that as long as this policy of secrecy prevails, we have no means of judging what the Doctor's degree means or what it is worth in those institutions. They refuse to print their Doctors' theses. It seems to me, as everything is tending, that this whole matter of publications is going to be one of the most interesting and fruitful, and one of the most important, university questions that we have to meet.

MR. WEST: The question of the enormous number of these publications is related to another question. I have felt that one of the dangers toward which our graduate departments are tending in the production of a large number of Doctors and the publishing of a large number of theses is the increase of the so-called "learned proletariat;" that many men are coming on for whom there is no place. The time is approaching when we shall have to learn the lesson of the Old World, and not train men in excess of the demand for them, but train a few better men rather than so many.

That seems to be the lesson of such schools as the French school of archaeology in Rome. They have only so many places, and regulate the number of men they let in there by the number of places open to those men in their career. If back of the publishing of Doctors' dissertations is a limiting force of this sort, that will cut out the less valuable, and confine the degree of Doctor of Philosophy to men whose scholarship is really valuable, and whose dissertations are not only examples of skill and ability to investigate, but also valuable contributions, it would reduce the bulk of the Doctors' dissertations enormously. Take, for instance, history and biology. There is a perfect flood of dissertations sweeping over us, and how can any man keep up with that literature? The mass of these dissertations is threatening to swamp the power of the investigator to find out what has been done. How is it ever going to be possible to handle this question, unless something is done to limit the enormous number of things published? I feel the same about the number of journals; there are too many already.

MR. LOUNSBURY: I must say, as President Eliot said of himself this morning in another connection, that I am a hopeless heretic in this matter of publishing a large number or the majority of the dissertations presented by students. I have been saying of late that it was the great mistake of my life that I did not arrange to be born at the end of the nineteenth century, but after the picture which Mr. Hall has given of the threatened invasion of dissertations in the future, I think I am saved a good deal of that boredom which has hitherto fallen to my lot. I have waded through an immense number of dissertations, thousands of them I may say, and I think that I could have got by a little original work of my own all the benefit that I ever got from them.

My idea of a dissertation is this, that it is to train the student himself in methods of investigation. It is for his benefit that he does the work, not for the benefit of humanity generally, although they may incidentally come in. If in any particular instance he accomplishes work which deserves to be published, it is a fit reward that the university should publish his work, or that he should be encouraged to publish it. Otherwise it seems to me that the best place for it is in manuscript. It has done him good, but why should he afflict the rest of humanity by forcing them to look up that particular thing simply to find it is of no value? If you limit the printing of dissertations to those that are exceedingly good, that is a direct encouragement to the men to bring out the very best results. It is an encouragement to the best men; and those dissertations which are of no special value except as they have developed the man himself can be very safely left in manuscript and deposited in the college library, if it is so desired. But it seems to me that this useless multiplication of theses or doctoral dissertations, which will turn out to be of the slightest possible value to any special student and take up his time for nothing, is really a waste of money and time for the individual who consults them. I speak thus because I have had very melancholy experiences with reading hundreds and hundreds of dissertations.

MR. FINE: What Professor Lounsbury has been saying reminds me of a little chat which I had with a very eminent mathematician of Germany, about ten years ago, a little while before his death. He was very hard at work reading over some journals when I met him. In the course of conversation he said he thought the best thing that could be done for the advancement of mathematics would be the appointment of an international commission to which all material claiming the right to be published should be referred. He said that if that commission should do its duty properly, it was just possible that at the end of the year a little volume containing three or four

articles would be allowed to appear. He said that of mathematics, and in mathematics the amount of stuff that is produced and published each year is extremely large. It is not too much for the universities once in a while to take the position in dealing with their students that the first thing a man must have, if he is to be a fit man to enter the field of scholarship and learning, is a real love of learning for its own sake. If a man cannot wait a while before his name appears in print, until he has something that is worth printing, if he is not willing to work because of the intellectual satisfaction that he will get from making new discoveries for himself, it is far better that he should be kept out of the field of scholarship altogether, for he will do nothing worth anyone's time. He will be producing stuff that will simply cumber the ground. I am in most hearty accord, therefore, with Mr. Lounsbury in regard to another phase of the same question, and what has been said by a number of others. I think it is a very serious question whether we are advancing learning by encouraging overmuch production.

MR. MUNROE SMITH: It is certainly a very difficult question that has been brought before us. Some of the indictments that have been framed against Doctors' dissertations and journals lie against all modern literature, books included. I remembered, while the gentleman was quoting the plaint of the German professor, a remark that Professor Jhering made to me on one of my visits to Germany. He laid down a review and said: "Somebody has been criticising a recent work of mine because I do not command the literature. Now, if I had read as many books as that man has, I should be as stupid as he is." But the serious side of the matter is the question, what check there is upon the university that is giving the Doctor's degree. If the dissertations of all persons to whom the degree is given are not published, all possibility of control disappears. I do not see that it is necessary to read all the dissertations that are printed in any particular field of science in which one is interested. I suppose, as far as the interest of the scientific man who is trying to keep pace with literature goes, this entire matter will work itself out by a subdivision of labor. As in contributions to journals, so in Doctors' dissertations and in all the other mass of printed matter, sooner or later there will be a sifting out by some benevolent persons, a few in each profession, of the things that ought to be read. It will not be necessary for every investigator to read everything; a few people can do the work of discarding for a great many.

The discouragement of persons not fit to produce dissertations is not an insoluble problem. In our particular faculty at Columbia, that of Political Science, we have followed, as regards dissertations, a policy different from that followed by the other faculties. We do not require that a man shall complete his Doctor's dissertation before he passes his general examination on the whole field of study which he has selected. We permit a man to take his examination on what we call majors and minors, after having submitted only the title of his dissertation. Then we allow that man three years, if he likes, of non-residence, to work up his dissertation. In a great many cases, of course, the man before he leaves Columbia has worked out a dissertation that perhaps could be printed; but unless we think that the man has done some work that deserves printing, we advise him to work further. We tell him he need not be in any hurry; he has under the statute three years, and in case of necessity he may have more. Now often, if a man puts off publication for three years, he becomes a little more critical of his own work. As a matter of experience, fully half the men who have gone away intending to write dissertations never complete them. They simply convince themselves that they have nothing particular to say. Now, the faculty has put itself to the inconvenience of examining these men without any visible result, but we think we benefit

humanity in submitting to this apparently fruitless labor. The fact that so many dissertations have not been printed is probably clear again, not only to the individual who has been restrained by his own sober second thought from printing, but to the community at large. The secondary result of this deferred dissertation is that the men who do come in with dissertations have clearly thought things out, in a much larger number of cases, at any rate, than could have been expected if they had been forced to print earlier. I do not know what the usage is at other universities, and, as I say, at Columbia there are varying usages in the different faculties. In our own faculty our experience has been that it is undesirable to maintain the German rule that a man shall not be examined until he has put his dissertation in shape ready to print, because we think it forces the men to complete dissertations before they are really ready to do so.

MR. LOUNSBURY: I should like to ask Mr. Munroe Smith if he thinks the requirement of publication has acted as a deterrent upon the printing of poor dissertations. I will say, for instance, that some Yale dissertations have been published which I do not even want to hear anyone mention to me. I regard them as disgraceful. But the fact that they were published has not kept them from being accepted. I can say the same thing of some that I have seen from other institutions, but I select my own.

MR. MUNROE SMITH: I think that is a very difficult question to answer. Undoubtedly many dissertations are printed that ought not to have been accepted. But unless we could see the dissertations that are not printed and on which the doctorate is given, or unless we could tell just what kind of dissertations would be honored with the Doctor's degree except for the requirement of printing—unless we have these data, which are not obtainable, the question cannot be answered definitely. It seems to me probable, however, that the dissertations are of a higher quality as a result of the requirement of printing.

MR. LOUNSBURY: Suppose that you invariably only print the exceptional dissertation, the one that the university would be willing to stand for, would not that largely obviate the great difficulties which are connected with the subject?

MR. HADLEY: A really first-rate man, unless he happens to have genius, is not ready to write at the time when he would naturally take his degree of Doctor of Philosophy. A second-rate man rushes into print. Now, the question is whether, to keep that second-rate man up to a certain standard, it is worth while to inflict all this literature which is not first-rate—most of it would be very bad—upon the public. I read recently a very long monograph on *Rent*, that was published in one of the universities whose doctorate stands deservedly highest. I happened to have some knowledge of it because I once spent two days reading up on that subject for my chapter in *Economics*. The man simply did not know anything about it. He had published a book of three hundred pages, absolutely disgraceful work; but it passed, because the instructor did not happen to have occasion to read up that thing especially, on his own account, and he could not tell whether it was good or not. It looked good. Now, the question is whether we really establish a sufficient amount of protection for the Doctor's degree to make up for the amount of nuisance we inflict. There is a difference of opinion. Some think that the protection outweighs the nuisance; others, that the nuisance outweighs the protection. I do not know how we are going to find out. I rather sympathize with Mr. Lounsbury's view of the case.

MR. BAKEWELL: I think the strongest objection that is brought against this whole matter of publication is that it increases the burden of the scholar by the undue multiplication of books. I suppose all of us, in our dreamy moods, long for a state where we could have Carlyle's best man, or Plato's ideal man, on hand to chop off the heads of all the worthless things; or have this committee appointed that would sift out the three things that were worth publishing in the year's production. But we all know, in our soberer moments, that the only man who is capable of doing that is old Father Time, and we must give him the material to work with. It seems to me that the only thing we have to guard against is an utterly reckless and irresponsible method of publication. A good deal of that is done now, and the method of publishing Doctors' dissertations now largely leads to that. The condition of the Doctors' dissertations put forth in Germany shows that. Things would be largely remedied if we took a different notion of Doctors' dissertations. This long work that President Hadley refers to, that was more voluminous than enlightening, would not have been produced if we had not allowed ourselves to be imposed upon by the notion that Doctors' dissertations must have bulk, and if we looked for the marks of a scholar in other ways than by the presentation of such a monograph. It may be true that a man cannot, when starting out on his career, publish a large volume that would be of any value; but it is not at all true that the best students will not be able, at the average age when a Doctor's degree is taken, to bring out some contribution that, although modest, would be distinctly worth while, if he is kept to that and not made to feel that he must write a book.

THE FOURTH SESSION

ARE THE DEGREES OF BACHELOR OF SCIENCE, BACHELOR OF PHILOSOPHY, AND BACHELOR OF LETTERS TO BE PRESERVED OR TO BE MERGED IN THE DEGREE OF BACHELOR OF ARTS?

PAPER PRESENTED BY RICHARD HUDSON, OF THE UNIVERSITY OF MICHIGAN

It is the purpose of this paper to examine the policy of the University of Michigan in regard to the Bachelor's degree from the date of the establishment of the degree of B.S. to the recent abolition, as far as the Department of Literature, Science, and the Arts is concerned, of all forms of the Bachelor's degree except A.B. In this matter, as in most others, experience is our best guide. The policy of universities slowly adapts itself to changing needs and conditions. These needs, as they make themselves felt, produce an opinion that change is desirable. In time, as a result of a comparison of views, a common opinion is evolved and takes form in legislation. While these changes are in progress, concessions are made in individual cases in deference to the new views. In universities, as in the state, legislation is often little more than the legal recognition of changes that in part at least have already taken place.

In entering upon our study it is important to bear in mind that the establishment of new degrees was the form taken by the enlargement of the curriculum. This is particularly

true of the establishment of the scientific course. When President Tappan in his inaugural address, delivered December 21, 1852, mapped out the new line of policy, freer ideas in regard to education were already in the air. Harvard had established the Lawrence Scientific School with the degree of B.S. At Brown Dr. Wayland, a pioneer in the movement which aimed at breaking up the rigidity of the old college course by the introduction of new lines of work, had carried through a number of changes, including the establishment within the academic department of a course leading to the degree of Ph.B. President Tappan had felt the inspiration of these new ideas of collegiate education, and he entered upon his work with the clearly defined purpose of enlarging the curriculum by the introduction of a new course. The importance of the first step in the direction of several degrees justifies a quotation from his inaugural address:

Now, our first object will be to perfect this gymnasium. To this end we propose to establish a scientific course parallel to the classical course. In this scientific course a more extended study of the Mathematics will be substituted for the Greek and Latin. There will be comprised in it, besides other branches, civil engineering, astronomy, with the use of an observatory, and the application of chemistry and other sciences to agriculture and the industrial arts, generally. The entire course will run through four years, in which the students will be distributed into four classes similarly to the classical course. . . . Students who pursue the full scientific course, and pass the regular examinations, we shall graduate as Bachelors of Science. . . . We shall thus make our college or gymnasium an institution where the youth of our state can freely enter to prepare themselves for professional study, for the higher pursuits of science, or for the pursuits of business life. . . . By establishing the scientific course in distinction from the classical we do not intend to do any discredit to classical learning. . . . In my view Latin and Greek can no more be banished from a system of education than history, rhetoric, poetry, and philosophy. . . . We are only arranging a system of education to meet the wants of students of every degree. Suffer every man to choose for himself and help every man to the kind and measure of learning which belongs to his actual pursuits.

The new scientific course included two years' work both in French and in German. No foreign-language study was, however, required for admission until the year 1873, and then only one year of French. The foreign-language requirement for admission to this course was, however, gradually increased until it became four years of either Latin, French or German, or two years in each of two of those languages. A third course was established in the year 1866 leading to the degree of Bachelor of Philosophy. Four years later this new degree was conferred for the first time upon seven members of the graduating class. The new course differed from the classical only in that French or German took the place of Greek. This change was due to the increasing interest in the modern languages both in the University and in the high schools. In comparing the policy of the University with that of eastern colleges and universities, it must be remembered that in the academies and schools of New England the classical tradition was much stronger than in the schools of the West. Liberality in entrance requirements was indispensable if the University was to

draw to itself large numbers of students and to gain a large influence over the schools of the state. The establishment, ten years later, of the English course, with its degree of Bachelor of Letters, was another step in the direction of articulation with the schools. In the year 1880 this degree was conferred upon three members of the graduating class. It seemed desirable that the English courses in the schools, which were equal in length with the other courses and numerously attended, should be brought into relation with the University. The scientific course had for over twenty years afforded to students without foreign-language preparation an opportunity to enter the University. But, as we have just seen, that gate had been closed by the requirement of foreign-language study for admission to that course. The gate thus reopened was not again closed until 1896, when two years of either Latin, French, or German was made a minimum foreign-language requirement for admission. The establishment of the English course coincided with the increasing attention paid to such subjects as history, political economy, and literature, for which the student had but little time if he specialized in the direction of the already existing courses.

While new courses were being added, the old courses were being made more flexible by the introduction within the courses themselves of the principle of election. These two processes were in reality two different methods of reaching the same result. Flexibility is gained in the one case by the choice between courses, in the other by the choice between subjects within a course. The elective system, as it exists today at Harvard and Yale, is the result of the gradual increase in the number of elective subjects in the college curriculum. The principle of election has made its way in successive applications from the top to the bottom of the college course. The question naturally arises why the movement at the outset did not follow the same track in the western universities. The explanation is no doubt to be found mainly in the fact that the establishment of such courses as the scientific course and the English course, from which the classical languages were altogether excluded, and for admission to which no foreign-language study whatever was required, was such a radical departure as to make new degrees necessary. Where the transition has been gradual, as it was in the universities named, men have gradually ceased to regard the degree of Bachelor of Arts as standing exclusively for classical study. It must be admitted also that the new courses were not equal to the old. The argument against one degree is strong as long as the courses whose equality it is proposed to recognize have not been made at least approximately equal.

As a result of the evolution here described, there existed side by side four forms of the Bachelor's degree, each with its own requirements for graduation. In each of these courses there remained, even after the extension of the elective system in 1878 from the Senior year downward, enough required work to cover more than a year and a half. Mathematics, philosophy, and English were common to all four courses. In addition to these three subjects, the first course contained the classical languages and French; the second, Latin and the modern languages; the third, the modern languages and science; the fourth, modern languages, history, and literature. In the scientific course but one year of mathe-

matics was required, while in the classical and Latin courses the student could escape second-year mathematics only by carrying, in the one case Latin and Greek, and in the other Latin and a modern language, through the second year. In the English course the requirement in mathematics was reduced to a semester, as a concession to the non-mathematical mind. The concession is of value as an admission that a year's work in mathematics ought not to be required of all students.

Now that freedom of election had been carried to the point here described, it was clearly impossible to go much farther in that direction without obliterating the distinction between the courses. The question that the faculty had to face was whether it should go farther in the direction of freedom of election, even though in doing so it would be necessary to abolish three forms of the Bachelor's degree. The primary object was to give to the student a freedom of choice inconsistent with the coexistence of degrees and courses. Recent changes in the University are in harmony with its earlier history. The establishment and the abolition of three forms of the Bachelor's degree are, strange as it may seem, the beginning and the end of the same process. It would, indeed, have been possible to maintain the four courses as alternative requirements for one degree; but this would have meant the perpetuation of the group system, the very thing experience had condemned and the University had outlived. It was because the group system did not have the necessary elasticity that its abolition was decreed.

A change in the requirements for admission preceded and prepared the way for a change in the requirements for graduation. Under the old system each course had its own entrance requirements. A student passing from one course to another had to meet the entrance requirements of the course in which he proposed to graduate, unless the committee on substitution gave him relief. One of the functions of that committee was to adjust entrance credits in case of transfers from one course to another. The most frequent case of transfer was between the English and the scientific courses, for admission to which the foreign-language requirement was respectively two years and four years. Inasmuch as a student entering either of those courses was prepared to take in the University the work required for graduation in the other, the only obstacle in the way of transfer was the entrance requirements, which had to be adjusted in every case. To meet this inconvenience the requirements for admission to the several courses were made alternative requirements for admission to the University. As a result of this change a student, once in the University, might take any course that he was qualified to take without troubling himself in regard to his entrance work. This was at least a slight step away from the tradition according to which a student was predestined for a particular degree from the beginning of his high-school course. Even after this change, however, certain entrance subjects might be counted in one or more groups, but not in others. This is but another illustration of the rigidity characteristic of the group system. When this defect was remedied, the groups ceased to exist, and the subjects that might be counted for admission fell into the two categories of required and optional.

These changes in requirements for admission were more easily made because opinion was already ripe for the more important change in degrees that was to follow. Action had been deferred because it was thought that in a question of such importance, and involving so many interests, no action should be taken until a consensus of opinion had been reached. The wisdom of this course was vindicated by the practical unanimity with which the decision was reached. Even those who were still unconvinced no longer denied that the time had come when the general opinion of the faculty was entitled to prevail. The argument that no one university has the right to change the significance of the Bachelor's degree had lost its force now that a number of colleges and universities had taken this step. It is worthy of remark that no attempt was made to retain the degree of Bachelor of Science, which henceforth was to be given only by the Department of Engineering. This was the oldest of the three and had a well-recognized significance. Regret has occasionally been expressed by men in scientific lines that they parted with it so easily. At the time, however, arguments based on the impossibility of making degrees describe the work done, and upon the inconvenience of the group system, met no criticism in that quarter. Indeed, experience had shown that the requirements for graduation in the scientific course had defects that could be remedied only by greater freedom of election.

The rapid expansion of the curriculum in recent years had already deprived the degrees of their descriptive character. A large proportion of the work of the modern university is done in lines which a few decades ago received little or no attention. Even thirty years ago all the instruction provided in history at the University of Michigan was given by one professor, while in political economy but one course was offered. It was the introduction of new subjects that made the elective system necessary. In a rigid course there would have been no room for them. It was only the large freedom of election within the classical course that enabled that course to maintain itself in competition with other courses. So true was this that the classical degree was far from meaning that those who received it had specialized in the classical languages. All the inference that could be drawn from the degree was that the holder had done at least one year's work in one of the classical languages and two years' work in the other. His advanced work might have been in science, history, political economy, or the modern languages. It was a serious drawback that the required work in the early part of the course prevented the student from laying the foundation for advanced work in other lines. The existing situation represented the concessions which the old curriculum had down to that time been compelled to make to newer studies. The required studies were so many peaks which had not as yet been submerged by the rising waters. The degree of Bachelor of Science was in one sense more descriptive than the degree of Bachelor of Arts, for that really stood for specialization along one or two scientific lines. "Science," however, is too general a term to give it much value for the purpose of description. This fact it no doubt was that led to the establishment of the degrees of Bachelor of Science in Chemistry, and Bachelor of Science in Biology, side by side with the degree of Bachelor of Science. Even if the thing were feasible, the question

might still be raised whether the undergraduate course ought to be so highly specialized as to justify distinctive forms of the Bachelor's degree.

In the year 1900, the last year in which the four degrees were given, the number of persons receiving the several degrees was as follows: A.B., 64; Ph.B., 80; B.S., 51; B.L., 58; total, 253. The figures given below deal with the period beginning with the year 1888, that year being selected because then for the first time the number of Bachelors reached the hundred mark. The first column gives the total number of persons receiving the Bachelor's degree; the second, the number of persons receiving the degree of A.B.; the third, the percentage the latter is of the former.

Year	A.B., Ph.B., B.S., and B.L.	A.B.	Percentage
1888	104	54	51
1889	86	35	40
1890	114	51	44
1891	129	54	41
1892	146	62	42
1893	186	74	39
1894	169	60	35
1895	197	66	33
1896	179	58	32
1897	194	63	34
1898	242	79	32
1899	229	62	27
1900	253	64	25

It will be seen that during the nine years immediately preceding the change in degrees the number of A.B. students had remained practically the same, while the total number of Bachelors had been rapidly increasing. In the year 1900 the classical students formed but a fourth of the graduating class.

It is evident from these figures that the relative decline of classical studies is not due to the change made in the significance of the degree of A.B. Indeed, this decline was one of the arguments used against the change. It was claimed that Greek could not afford to dispense with the protection that the degree gave it. The number of schools from which the classical course could be recruited was not large, and it was feared the number would become smaller if schools were no longer under the necessity of providing instruction in Greek in order to remain in relation with the A.B. course. Indeed, the outlook for Greek in the schools was far from favorable. Only the stronger schools could afford to give courses for a very small number of students; and even in some of the stronger schools the interest in Greek seemed to be waning. While the disadvantages under which Greek suffered were fully recognized, it was, nevertheless, felt that the faculty was no longer justified in making use of degrees to give one subject an advantage over others. Why tempt a student not to follow his own bent? Such a course does not succeed in the long run. In time the force of tradition is broken and a change takes place in the relative estimation in which the competing degrees are held. Proof of this may be found in the reluctance

with which some professors in scientific lines parted with the degree of B.S. Now that the culture and civilization of Greece and of Rome have become part of our modern life, it is inevitable that the languages which have served as the vehicle of that culture should suffer loss of prestige. The modern languages and literatures, the sciences, history, political economy, sociology, demand their share of attention. In recognizing the equality of all branches of learning the University had no thought of disparaging classical study. The words uttered by President Tappan in 1852 were equally true in 1900:

We do not intend to do any discredit to classical learning. . . . In my view, Latin and Greek can no more be banished from a system of education than history, rhetoric, poetry and philosophy. . . . We are only arranging a system of education to meet the wants of students of every degree.

The most serious objection to the system of parallel courses was lack of elasticity. The four courses were no better than hundreds of other combinations that the student could make for himself, if allowed the necessary freedom. Says President Eliot:

Groups are like ready-made clothing, cut in regular sizes; they never fit any concrete individual. Either the needs of the advised must be somewhat disregarded, that he may be forced into a group, or a group must be patched to make it cover fairly well the individual case.

The writer of this paper was for a number of years a member of a committee called the Committee on Substitution, which did something toward adjusting the group to the needs of the individual student. The committee was sorely perplexed between the desire to uphold the law and the wish to give relief in the particular case. Moreover, the committee had to do its work in the dark, revising the course for students without a sufficient knowledge of their needs or aims. When it did give relief, it usually had to put it on the ground that the student probably knew what he was about. Such concessions, justified by such a plea, evince a growing conviction that students are likely to form a better plan of work for themselves than anyone else can form for them, to say nothing of the greater interest they are sure to take in work of their own choosing. As a result of a critical study of the elections made by the classes of 1884 and 1885 during their Sophomore, Junior, and Senior years, President Eliot asserts that the elective system does not produce a capricious selection of heterogeneous, disconnected elementary studies, but, on the contrary, results in consistent plans of individual study throughout the college course. Dean Briggs expresses the opinion that the professional snap-hunter is much rarer than is commonly supposed and that even weaker students have intellectual interests and choose many of their courses with those interests in view. In a recent report to the Board of Regents, President Angell, referring to the step just taken, also bore testimony to the wisdom which the students with few exceptions have shown in the use of the liberty hitherto enjoyed, and expressed the opinion that legislation ought to have in view the ends of the great mass of our students who "are here with an earnest purpose and aim to secure the best results from their college course."

It might be feared that freedom of election would produce a one-sided education. The danger, however, is far from being as great as might be supposed. No one can get far into any subject without discovering that its relations with other subjects make a knowledge of those subjects necessary. Still other lines of work, such as the modern languages, will be needed as instruments of study. By this grouping of cognate subjects variety is gained without sacrificing unity. It is this organic unity of a student's work with reference to his tastes and purposes that the elective system favors. Such a plan will at the same time train the faculties and prepare the student for his chosen career. It is only by encouraging men to lay broad and deep the foundations of their chosen work that we can meet the encroachments of technical study. To state the case as though the choice lay between classical study and technical training is to invite defeat. Fortunately, there is in the educational world today a growing catholicity. While men may differ in opinion in regard to the educational value of different subjects, they are nevertheless coming to believe that intellectual training and power may be gained along any of the lines that together form human learning, that the best studies for any particular student are those that aptitude and aim lead him to select, and that to gain a liberal education a man must delve so far into his chosen subject as to discover and trace its relations with other branches of learning.

ARE THE DEGREES OF BACHELOR OF SCIENCE, BACHELOR OF PHILOSOPHY, AND BACHELOR OF LETTERS TO BE PRESERVED OR TO BE MERGED IN THE DEGREE OF BACHELOR OF ARTS?

PAPER PRESENTED BY PAUL SHOREY, OF THE UNIVERSITY OF CHICAGO

We have all taken part in gentle and joyous passages of arms between the enterprising champions of the new queen *Omniscientia* and the few knights still faithful found to the classic charms of my lady of letters. We have all seen pedagogical deliberations converted into a sort of Aristophanic *Agon* in which the Old Education and the New strut embodied on the stage and berate each other for the entertainment of a theater that laughs at every witty sally and applauds every palpable hit. It is easy to compile the conventional Fourth of July oration or triumphant pæan of victorious science from Lange's *History of Materialism*, Lewes's *Biographical History of Philosophy*, the *Essays* of Huxley and Tyndall, Draper's *Intellectual Development of Europe* and the universal Mr. Carl Snyder. And the puniest professor of Greek needs no Isocratean decade for the preparation of his *Panegyricus* on classical and Hellenic studies with arguments drawn from the arsenals of Whewell, Mill, Froude, Arnold, Lowell, Gildersleeve, pieced out with purple patches of Macaulay, DeQuincey, Ruskin, and Renan, and adorned with the appropriate quotations from Galton, Sir Henry Maine, Milton, and Shelley.

From the standpoint of partisan polemics, the arguments and the retorts of either side are equally obvious and equally devoid of true intellectual seriousness. The objection

that it is unfair to reserve for classics the prestige of the older degree is met by the unanswerable retort that the B.S. degree is quite old enough to stand on the merits of the type of education which it defines. Unity is not more sacrosanct than trinity, and the slight *a priori* prejudice in favor of the simpler-seeming, but less discriminating, terminology is more than counterbalanced by the long university tradition in favor of distinctions that are real, but need not be invidious. The attempt to laugh down the whole question as a survival of mediæval frippery logically leading to twenty degrees and as many colored badges recoils upon the mocker. Like arguments could be used to prove the futility of all degrees except the licenses to practice law, medicine, and engineering. These specific abilities must be tested and certified by the state. But culture, the liberation of faculty and the liberalization of feeling, the total resultant of all educational activities and experiences, who shall appraise that or stamp it with the esoteric trade-mark of collegiate monopoly? To what insignificance does his college course dwindle in the retrospect of that ungrateful graduate of Yale from the spiritual heights achieved in ten years' study of the law of evolution, ten years' assiduous attendance on symphony concerts and Ibsenian first-nights, ten years of foreign travel and frequentation of art galleries! If it is unreasonable to distinguish the graduate in classics or science from his classmate who has tasted the sweets of omniscience in the sample—I mean the lecture—room, why should we mark off the latter from his self-made friend who has pursued essentially the same type of education in correspondence courses, debating clubs, and the Young Men's Christian Association?

Let us set a limit to these divagations by defining the issue. The argument in favor of the three degrees logically rests on two main propositions: (1) The selection of a type of higher general education by the student is preferable to the unrestricted election of studies. (2) The fundamental types offered to rational choice are few, and the study of Greek is still of sufficient importance for our civilization to define one of them.

It requires some courage to avow oneself a disbeliever in that latter-day college fetich, the elective system. The world is only too ready to sustain the advocates of panaceas and the promoters of systems in the elementary fallacy against which our schoolbooks of logic warn us. If a thing is or has been good, it is easier to assume that we cannot have too much of it than to distinguish when, how, and for whom it is good. Freedom of choice, recognition of natural bent and inborn aptitude, the abolition of aristocratic privilege, and the assignment of democratic equality to unequal things are telling points in a popular address. To sober reflection they are question-begging phrases or equivocal abstractions. We need not go back to Ruskin or Plato for criticism of the notion that liberty is good for a man (or child), irrespective of the use that he is likely to make of it. It may have been a gain for progress to introduce the principle of election into the rigid curriculum of the American colleges of the sixties, and yet be a step backward to disorganize the work of our high schools by truckling to the whims of schoolboys. It may be wise to leave the type or course of study to the choice of the student, and very foolish to submit its component parts to his caprice. Judicious selection, guided by intimate and disinterested counselors,

is the ideal; the reality is the pretense of election thwarted by conflicts, diverted from its course by accident or momentary convenience, and counseled, if at all, by deans who are always hurried and not always competent or disinterested. In these conditions liberty of choice too often, as Ruskin says, "has simply destroyed so much life and strength never regainable."

During the past twenty years these patent objections to the prevailing cult have been repeatedly put forth in the form of tentative queries, modest doubts, or downright denunciations by intelligent onlookers like Charles Dudley Warner, sagacious experts like Dean Briggs, hard-headed disciplinarians like President Walker. As the results of the system have manifested themselves, they are heard with increasing frequency and emphasis. That they have as yet failed to stem the tide of so-called progress is due chiefly first, to the immense prestige which the elective system gained in the years when it was a beneficial reaction against the excesses of the old régime, and, secondly, to the fact that the assumption on high philosophical ground of the educational equivalence of all subjects is superficially the easiest compromise of the conflicts and rivalries between the forty or more departments that, having obtained a foothold in the universities, proceed to compete for the control of secondary education. From this vantage-ground the advocates of the system virtually decline to submit its merits to rational discussion. They smilingly assume that election always and everywhere is synonymous with progress, enlightenment, liberty, and that opposition to it can arise only from sinister and obscurantist conservatism. The inherent defects of the system and the difficulties in its practical applications they persistently blink or stubbornly deny. They prove that it is the true interest of an intelligent boy to elect his studies wisely, and assume that the majority will in fact do so. They enumerate the multiplicity of his potential advisers and take it for granted that he will be well advised. Like other utopists, they expect their institutions to work according to the designs of the author, instead of being worked by average human nature. I do not propose to enter upon educational statistics, in which I have a profound disbelief. Through a generation of pedagogical experiments I have had some opportunities of observation, both as victim and practitioner, and I do not fear anything but official and perfunctory contradiction when I affirm that election does not as a rule select. As a matter of fact, courses are not as a rule wisely planned and consistently carried through under the system. Not only does the student, in Socrates's phrase, fail to do what his better self really wishes; he is not even able in the conflict of programs to do what he pleases from term to term. The wise counsel that should be his guidance breaks down in the press and hurry of great institutions. And there is no reason why we should expect the system to work well. None of the arguments by which it is recommended apply specifically to the extreme form of election that usurps the name and its popularity in the general esteem. Their strength lay in their destructive criticism of obsolete abuses, which I hold no brief to defend, and which are not today the practical alternative of unlimited election.

In this extreme form the elective system is an outgrowth of peculiar American con-

ditions, one of many attempts to adjust that convenient but illogical institution, the American college, to a rational scheme of secondary liberal and university special education. The four-year prescribed curriculum, the same for all, at one end held mature students in tutelage too long, and at the other imposed one mold upon the high school. Election in the last two years removed the first difficulty. It facilitated the adjustment of the stronger colleges to the weaker, and of the stronger to university work at home and abroad. It enabled some to specialize and others to fill gaps in an earlier defective training. At the worst, it was an exaggeration of the year of discursive lecture-going in which many German students indulge themselves on first escaping from the discipline of the gymnasium to the freer life of the university.

This expedient, proclaimed a principle, was extended in the name of progress to the first two years of the college course. The adjustment to the high school then became a very easy matter. As the college had no educational ideas (in the Platonic sense), no definite types or molds, it could propose none to the secondary school. No alternative to one education prescribed for all was recognized, except a potential infinity of educations self-evolved from a fortuitous concurrence of atomic options. Plausible philosophical justifications of the triumphant principle are not lacking. The "identity of indiscernibles" is invoked to prove that no two boys are quite the same; and every individual likes to be told that his individuality is ineffable. It is urged that liberty is better than restraint; that diversity is a more healthful symptom of intellectual life than monotony; that inborn aptitudes must be ascertained by experiment and developed by opportunity; that interest is the best incentive to successful work; and that many boys who fail in Latin grammar have a gift for mechanics. These and similar truisms are easily victorious over opponents of straw, and conclusively refute the extreme views attributed to them. But they do not touch the simple considerations of common-sense on which the system of grouped studies and educational types depends. Despite the diversities of idiosyncrasy, students and their needs tend to fall into a limited number of clearly defined classes. Notwithstanding the infinity of permutations and combinations which caprice can evolve from a table of three or four hundred electives, there is a right and a wrong sequence and co-ordination of connected, contrasted, and supplementary studies. The collective wisdom of the university ought to be able to arrange and define such groups more wisely than the student himself or his casual advisers can do it. This is recognized as a matter of course in the professional school. Why should it not be true in the college? Such groupings will in themselves correspond to all fundamental diversities of taste and aptitude, and, without impairing their coherence and distinctive character, may allow for the play of individual variation by election within the group. If this is in fact the better way, it will sustain interest in the end better than the less coherent and effective curriculum of the unchartered freedom that tires.

The system of three degrees is in effect a system of such groups. Now, I have no superstition about the number three, and much of the argument applies with slight modi-

fications to an arrangement of six, eight, or even ten groups. But the tripartite division does best correspond to the real lines of cleavage in actual educational opinion and practice; it best embodies the inevitable antithesis and the reasonable compromises between the culture demanded by modern life and the culture of the European tradition.

The discipline and useful knowledge of science, the discipline and culture of the classics, mark the two most clearly defined types. They are defined, not by exclusion, but by inclusion. Neither shuts out the other, or the modern languages and historical sciences which must enter largely into any scheme of liberal education. But the one demands that, whatever else be learned, there shall be a firm framework of training in the sciences on which our civilization is based; the other warns the student before it is too late that an education which is destined to be mainly literary and historical is best begun with some first-hand knowledge of the languages and literatures from which our civilization is derived. Election within or supplementary to these groups provides for the play of individuality, for the indefinite approximation of the two ideals, and, in the case of exceptional ability, for the complete reconciliation of them which John Stuart Mill somewhat optimistically postulates.

Many of the multifarious subjects that characterize the third, or Ph.B., category will, of course, have a prominent place in every curriculum. But no single group of them is at once so essential, so definitely organized and teachable, so well adapted to form the required framework of a well-balanced education, as are Freshman and Sophomore science and classics. Moreover, no higher course in these studies can be planned that does not logically presuppose a propaedeutic discipline in either classics or science, or both.

"Why then recognize them as a distinct type at all?" The extremist may ask, "Is not the Ph.B. a mere concession to human frailty, an illogical compromise, an accidental product of the deplorable conflict between science and classics?" It is not quite that.

The A.B. course involves the study of four languages. That is, broadly speaking, a prerequisite of a sound historic and literary culture, and is perfectly feasible for a considerable proportion of college students. I trust that it is not necessary to remind the eloquent denouncers of linguistic cram that I am speaking only of those students who give seven or eight years to liberal education; not of the masses, not of those whose education terminates with the high school or culminates in the school of technology.

But there is a large percentage even of college students who ought not to study four languages. Educational theory need not take account of the fantastic idiosyncrasies of students who like to be told by President Eliot that no boy in God's universe is precisely like any other boy, and who gravely assure us that they can learn Greek, but cannot learn German, or that they have a natural affinity for the seventeenth century, but cannot remember the sixteenth. But we must recognize real psychological differences.

I am cynically skeptical about students who cannot understand elementary Latin syntax, but distinguish themselves in mathematics, exact science, or political economy. The student who is really baffled by the elementary logical analysis of language may be a

keen observer, a deft mechanician, an artistic genius—he will never be an analytic thinker. But, however that may be, we cannot ignore the plain fact that the memory of foreign idioms, forms, and vocables is defective in many otherwise capable minds. To such the imposition of four foreign languages is a grievous wrong. No student should undertake Greek who finds special difficulty in retaining the vocabulary of the elementary courses in Latin, French, and German; and there are probably many students whose study of foreign languages should be limited to a little Latin and French.

And as this distaste for or inability to remember languages is by no means, as is often assumed, a mark of aptitude or taste for physical science, it is not practicable to assign all such students to the B.S. group. Here, then, apart from other considerations of convenience, is a real psychologic reason for the retention of the Ph.B. type. Many of the increasing numbers who elect it will, it may well be, surpass their fellows in the other courses, and judicious choice of studies may actually make it a more coherent curriculum than the A.B. or B.S. group when supplemented by unwise election. But this does not alter the fact that it is in itself an inferior type of education, which will too often be chosen merely in order to escape the definite and progressive discipline of science and classics. It is, however, a convenient and necessary category for the classification of a large body of students, and it supplies a field for interesting experiments that may or may not prepare the way for the group system of the future.

Without disorganizing the more clearly defined and, in my opinion, superior types of the A.B. and B.S. groups, it is possible to arrange under the broad ægis of the Ph.B. minor groups—in the political and social sciences, in “commerce and politics,” in “literature in English,” in “social service,” in music, journalism, and painting on china, which, whatever they may become in the future, are not yet distinct and recognizable alternative types of a truly liberal non-professional education

I do not deny that similar results could be attained by other methods. We are all engaged in adjusting old machinery, which it is impossible to discard, to the problems of an era of transition and compromise. Given the American high school, the four-year college course, the new university ideal, the conflict of studies, and the elective and group systems, an ingenious mind may invent many devices for the correlation of the three educations: elementary, secondary-liberal, and university. A required curriculum for all, supplemented by a number of divergent groups, would be a logical system. But we cannot agree upon a required curriculum; and, if we could, we should be ignoring the fact that present conditions demand, not one, but at least two alternative types of liberal non-professional education. On the other hand, if the groups are introduced at the end of the Sophomore year, supervening on a choice of two or three clearly defined curricula, we shall have in effect the existing system of Germany, or the system of the University of Chicago, with further restriction of indeterminate election. If the groups are introduced much earlier, we have either premature specialization or an irrational and fantastic multiplication of types of general education.

This is at present the chief objection to what is generally known as the group system. There is no competent arbitrator to determine the groups. Every subject needed for the complete reflection of human knowledge in the university will demand the headship of a group. And the principle of election will be invoked to multiply the groups until they are felt by the students as merely artificial barriers to unrestricted freedom of choice. The actual groups will be determined by the compromises of faculty politics, and they will indicate branch roads to specialization, rather than the main highways of liberal education.

All this is on the assumption that the study of Greek still retains typical and eidopœic significance; that Greek is not merely one of many dead and recondite languages which the university teaches solely because it must teach everything; that Professor Chamberlain was misled by personal preferences when he said in his haste that Choctaw would do as well, and Chinese, because of its psychological affinity, better.

It is not easy to sustain a thesis which to half of the audience is a truism, and to the other half a superstition "calamitous to the point of pathos." But no one who has followed recent educational discussion will doubt that Greek appears to possess some typical significance, whether for good or evil.

The practitioners who have been explaining to us why college education fails exhibit the most picturesquely various remedies—the extension of the elective system to the cradle; the abolition of the three R's, and the substitution for these abhorrent disciplines of an hilarious dramatic recapitulation of race-experience; the modernization of the secondary school by experimental psychology, double-entry bookkeeping, and the newspaper press; the bringing of the college into touch with life by field-work in criminology and journalism; the crowning of the edifice by lectures on the psychology of woman and the art of choosing a wife. President Hall visions salvation in the people's college of the future. The basis of the curriculum will be oratory. (President Hall does not believe with Daniel Webster that "the curse of this country is its eloquent men.") Science will be embodied in "the sun and moon than which Plato and Aristotle knew no higher gods." (Greek philosophy is not included in the curriculum.) Ethical principles will be delicately, but effectively, insinuated from the fertilization of plants. The practical faculties will be trained to their highest efficiency by "various kinds of rope-splicing." The graduates of this curriculum will be turned out accomplished *struggle-for-lifeurs* (has not President Hall's Anglo-Saxon innocence here overlooked the sinister connotations attached to this coinage by its French authors?), and competent to occupy half a dozen chairs "in a monohypic (*sic*) college." It remains only to add that literature will be studied chiefly in the mediæval epics. High-school boys have outgrown Homer. Original in his other suggestions, President Hall seems here to be plagiarizing the precocious lycean of Alfred de Musset, whose profession of faith may be roughly Englished thus:

At the age of fifteen, when my reading was scanty,
I reveled in Parzival, Gudrun, and Dante;

My lofty brow bulged and my eyes darted flame;
But as for those dullards whom pedants acclaim,
Your Virgils and Homers and classical lumber,
The up-to-date youngster disdains a back number.

President Hall's colleague, Professor Chamberlain, finds a panacea in compulsory Chinese for all teachers of English. So in place of obsolete Latin etymologies and the vapid inanities of tame Hellenic rhetoric, they could impart to their student the philological erudition, and propose for their imitation the chaste imagery of the following passage, justly admired and often quoted by the progressive opponents of the classics: "All the Latin in modern English is thus pretty well pickled. Before it went into the brew, too, every bit of Latin had the Anglo-Saxon meat inspector's mark put on it. And a good many carcasses went to the soap factory." "I am a strong man," said Théophile Gautier; "I can bring the dynamometer to the 500-pound mark, and my metaphors are always followed up."

But, whatever the cure, our reformers are in one tale in their diagnosis of the malady. Greek is the one obstacle that delays the coming of the social and educational millennium. The 20 or 25 per cent. of students who learn a little Greek in our colleges corrupt the whole curriculum for all the rest. It is Greek that spoils the graduate for the service of the counting-house and the ledger, and blasts the embryo millionaire in the bud. It is the indelicacy of Homer and Virgil that my friend Professor Moulton deprecates for the modesty of literary students of the Old Testament and seminarists in the Elizabethan drama and the eighteenth-century novel. It is Greek, if the newspapers have not misrepresented President Hall, that tames the native wood-notes wild of the American boy and robs him of his birthright in the picturesque idiom of Chimmie Fadden and Mr. George Ade. It was Greek, according to President Andrews—excess of Greek—that sapped the energies of effete New England; and, such are the surprises of the higher education, it is Greek—deficiency of Greek—that is "what is the matter with Kansas" and Nebraska.

The critics of secondary education take up the parable. Four or five per cent. of high-school students may elect Greek; but the mere presence of a dead language poisons the atmosphere, they tell us, and nullifies all projects of reform. I am assured on high educational authority that it is Greek that has held down the southern negro so long and thwarted through all these years the devotion of Mr. Booker Washington. And, to cap the climax, from a very interesting study of the work done by our great New York elementary schools to civilize and Americanize the children of pauper immigrants, I learn that it is excessive devotion to their Hellenic studies which excludes these unfortunates from the practical courses in housekeeping and manual training, suitable to their presumptive station in life.

These utterances are psychologically explicable, but in the light of the imaginative reason it is simply comic that the study of the noblest language, poetry, and art, and very nearly the most significant life-history and philosophy of human tradition should be rarely mentioned in educational discussion without a sneer or a gibe.

Edgar Poe somewhere observes that, while a point may be debated frequently because it is obscure, it often is obscure because it is discussed so much.

During the past ten or fifteen years there has been a dead set made against Latin and Greek in the newspapers and dime magazines, and the classics have been on trial before a jury perhaps a little too large to be a jury of their peers. What may be denominated the baiting of Greek has been a favorite pastime in certain literary and educational circles. Greek is assailed, not as Greek, but as the symbol of unpractical and useless studies; as the shibboleth of an arrogant and exclusive culture; as the chief stronghold of those who prefer words to things and dead languages to living science; as the college fetich, sole cause of all the waste, misdirection of effort, and disappointment in education which impatient idealists attribute to anything rather than to human nature; as the importunate representative of all the things "I do not know," that ought not to be worth knowing, and which, unlike other erudite specialties and dead languages, will not abide in its corner and stay decently buried, but after two thousand years still thrusts its shameless vitality upon our distracted modern attention. Approaching the subject in this large, symbolic fashion, the opponents of Greek have not always allowed themselves to be hampered by the actual facts of the educational situation, or by the conventional rules (gifts of those Greeks!) that govern the relations of premises to conclusions. Scarcely a month elapses in which some enlightener of public opinion does not sketch for us the history of European education from the Renaissance down, as a preliminary to arguing that, since the immense expansion of modern knowledge makes Greek relatively less important today than it was three hundred years ago, therefore it is of virtually no significance whatever, it being a self-evident principle of evolution that whenever we detect a tendency in life or education we should accelerate progress by pushing it to the limit.

At every educational conference somebody takes the floor to argue that, because he was taught Greek badly or has forgotten it, we may infer that nobody is taught Greek well now, or that no other subjects are ever taught badly, or that the average boy masters and remembers through life his science, mathematics, or history.

Educational conventions still echo to denunciations of abuses as obsolete as the Inquisition. Language that would be an exaggeration if applied to the most hide-bound, old-style, Latin-verse-writing English public school, the narrowest French *lycée*, is used to deplore the obstruction of modern progress by Greek in high schools, where not 3 per cent. of the students ever learn the Greek alphabet. The protests of French critics against the official requirement of a classical education for access to all professions and offices of the state are transferred to American conditions, to which they are wholly inapplicable.

Sociologists epigrammatically aver that Greek is an aristocratic study, a form of "conspicuous waste," desired for the sake of invidious distinction and social promotion, when a very slight inspection of the class-room in Greek would convince them that the social, athletic, and moneyed aristocracy among our collegiate youth judiciously elect courses that involve less interruption of their more serious pursuits.

It is impossible to take such diatribes as argument. They merely paint the situation and point the question which I desire to submit to your sober judgment. Do you wish to swell the cry of the yellow press against Greek, and set your approval on the tirades of pedagogical energumens "dizzy with indigestion of recent science and philosophy"? Do you wish to see Greek reduced to the position of a technical specialty like Sanskrit, Gothic, or Assyrian? The intrinsic charm of the study will probably prevent this extreme consummation under any system. But do we wish to favor the tendency, or have we already gone too far? "A free field and the survival of the fittest" are plausible catchwords of scientific analogy. But neither in life, literature, and morals, nor in education, does the survival of the fittest mean the abdication of intelligent influence, and, if need be, control, over popular estimates of the fit. If, as a matter of fact, the power of Greek in the college curriculum has diminished, is diminishing, and ought to be increased, in order that it may fairly reflect the actual value of Greek for our total culture, then it is a mere abuse of the cant of science to urge that the law of the survival of the fittest forbids our maintaining a helpful guidepost at the crossways of choice, and strengthening the appeal of Greek to the popular imagination by the retention for it of the honorific letters A.B.

This issue, which I submit to your sober second thought, would not be affected by any rhetorical enumeration of Hellenic glories which I might undertake here. But, for form's sake and as links in the argument, I must touch on a few of the well-worn topics. It is not merely that all western European poetry has its source in Homer, all history in Herodotus and Thucydides, all philosophy in Plato, all drama in *Æschylus*, all oratory and rhetoric in the Attic ten, all scientific classification and terminology in Aristotle. But the originators have remained the unapproachable models, and a revival of Hellenism has been almost a condition precedent to every notable florescence of the human spirit—of the Augustan age of Rome, of the civilization of the Arabs, of the Renaissance, of the new Germanic poetry and philosophy of the nineteenth century.

We speak of *the* Renascence, forgetting that the spirit of modern man has twice been renewed by the inspiration of Greece. The traditional classicism was running in a very shallow stream in the early eighteenth century. The mediæval divorce of Greek from Latin, which many counselors are urging upon us for a third time, was having its second trial. The talking delegates of science were even more vociferous than they are today in the demand that an enlightened age should break with the dead past, and that the higher institutions of learning should devote themselves to useful modern subjects only. "The eighteenth-century writers of France," says the eminent French critic Mr. Doumic, "paid dear for their modernity. He who goes seeking for a poet in the age of Fontenelle and Voltaire will have to wait for André Chénier—that is, for a return to Hellenism." The nineteenth century—the age of science, of the awakening of the historic sense, of the philosophy of evolution, of poetic renewal of national feeling—was no less distinctively the century of the restoration of Greek. This revival of Hellenism had its origin in the new birth of German scholarship, and in the revolt of the German spirit against the pseudo-classic art

and literature of the eighteenth century. The Winckelmanns, the Herders, the Wolfs, the Heynes, the Lessings, the Schlegels, the Fichtes, the Schellings, Hegels, Schopenhauers, Goethes, and Schillers were not all critical scholars. But the common trait that distinguishes them from their inane predecessors is that they went back to the original fountains of inspiration, that their gaze was fixed upon the true Hellenic idea and not upon the copy twice removed, the French or English imitation of its Latin reflection. From them the influence spread through many channels till it permeated the whole of modern life and thought, more especially the domains of historic and philological science, æsthetic and literary criticism, and the higher imaginative poetry. It was in the Greek seminaries of Germany that the historical and philological methods were created, the application of which has renewed our conception of the life and growth of national speech and culture everywhere. The ablest workers in other fields received their first training here, and a certain deficiency of the historic sense may still be usually noted in those who disdain Greek.

The steadily increasing influence of Greek through the century in the higher literature and poetry of England would demand an essay, or rather a volume, for itself. The names of Coleridge, Landor, Macaulay, DeQuincey, Arnold, Ruskin, Mill, Pater, Jowett, Martineau, Gladstone, among prose writers; of Coleridge, Shelley, Tennyson, Fitzgerald, the Brownings, Arnold, Swinburne, Lowell, among poets—may indicate the contents of a few of the chapters. There are notable exceptions, but, broadly speaking, throughout the century, in the higher walks of literature and philosophy, in proportion to the compass of a man's thought and the fineness of the issues to which his spirit has been touched, has been the extent of his devotion and his debt to Greek, whether through direct study or, as in the case of Keats, through influences which he could have received only in an atmosphere of revived Hellenic culture. All this would have been lost if the educational ideals of Perrault and Fontenelle had prevailed, and all this will cease to be understood if the similar doctrines of Spencer's essay on education are adopted now. To denounce so vital an element of our culture as the study of "dead languages" is the most pitiful of equivocations. Greek lives, not only in the masterpieces which Lowell's candor told the Modern Language Association were "rammed with life" as none other in the world; not only in its repeatedly demonstrated power to revitalize a conventionalized modern art and literature; not only in the modern Greek language, despite the philologists' fiat "impossible," steadily drawing nearer to the ancient form; but the very grave, the earth in which Greek sculpture and poetry lay buried, restores them in the freshness of everlasting youth to mock the disbeliever who deemed that the nature of things will suffer the vision of perfect beauty to die. We carve no statues as fair as those that we dig from Greek soil; and the best new volumes of poetry published in the last decade were deciphered from the Greek papyri of Egyptian tombs.

But all this, it will be said, is the field of the specialist. We may enjoy it in his translations, expositions, and adaptations. So we may gain quite a notion of science from popular lectures and surveys of the "wonderful century" without submitting to the toilsome discipline of the laboratory. We may seem, and in a sense be, well informed by possession of

the newest encyclopedia. We may pursue comparative literary studies in handbooks, university extension lectures, and libraries of the world's literature. We may study Italian art in photographs, travel vicariously with Mr. Stoddard and Mr. Burton Holmes, and take our music from the phonograph or the pianola.

I am not arguing that Greek is necessary to form a poet, an orator, or a thinker, in order that I may be refuted by the citation of Shakespeare, Keats, Bright, Cobden, and Spencer. No one thing is indispensable to the success or the culture of the individual. We all must be content with secondary and inferior knowledge in many fields. And in recognition of this the college may well provide lectures in science without laboratory work, discursive surveys of history and philosophy, and comparative literature in translations. But this is not its best and distinctive work. As only the best evidence is evidence in a court of law, so the acquiescence in nothing less than the best knowledge is what distinguishes the university from other equally estimable but different educational agencies. The seal and impress of the higher education is taken in those studies which the student pursues in this spirit, not in the halls where the fluent lecturer pumps a diluted stream upon the passive herd.

Broadly speaking, the university trains specialists; the college maintains the general glow and medium of intelligence in default of which the organs of the nation's higher spiritual life perish of cold and atrophy. And so, while it would be pedantry to insist that Greek is indispensable to the education of a gentleman, it is reasonable to urge that Greek ought to be studied at first hand by a number of students fairly proportionate to the place which a philosophical survey of what Bacon calls the *globus intellectualis* would assign to it. The discouragement of Greek studies is already marring the symmetrical reflection of that intelligible sphere in our college life. To what end?

Not to strengthen the serious discipline of science, but to crowd the overflowing lecture entertainment, or to convert elementary French and German from an indispensable tool of higher education into its substantive staple. Science rules the world. But the constitution of human nature forbids her exclusive predominance in the college. A large percentage of students will always demand an education mainly humanistic, literary, historical. The discouragement of Greek will merely increase the proportion of those who will take this type of education in an inferior form. Do we want a generation of literary critics who, on reading, "for the purpose of studying the superstitions of the early Greeks," the sixth book of the *Iliad* (the parting of Hector and Andromache), feel "what a task it would be to go on"? Are we to teach philosophy to those who are unable to understand and too impatient to read the first ten pages of Kant's *Critique*, and who suppose that Spencer's "Unknowable" is an original speculation? Shall the twentieth-century sociologist take his facts from Spencer's "Descriptive Tables," and be taught to believe that, "had Greece and Rome never existed, human life and the right conduct of it would have been in the essentials exactly what they are now"?

These considerations, which would be idle rhetoric if urged in support of a universal and impracticable requirement of Greek, may fairly turn the scale against joining in the unthinking clamor for its virtual suppression. And if the abolition of the distinctive B.A. degree is in fact demanded in order that Greek may be ousted, and for no other material reason; and if it tends, however slightly, to that result, then the praise of Greek is a legitimate, if not the most logically direct, argument in favor of retaining an academic symbol that does no harm, and helps to guard a noble and indispensable tradition.

DISCUSSION OF, ARE THE DEGREES OF BACHELOR OF SCIENCE, BACHELOR OF PHILOSOPHY, AND BACHELOR OF LETTERS TO BE PRESERVED OR TO BE MERGED IN THE DEGREE OF BACHELOR OF ARTS?

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HADLEY: I do not believe that this body has time to discuss the general question of Greek; the question is with regard to the B.A. degree. I believe it is wise for every college to make its own B.A. degree represent what it thinks most serviceable. There is no legislative power to bring the B.A. degree all over the country back to its old significance, no agency to make the B.A. degree mean Greek. Now the question comes up: Shall we attempt to give an artificial value to certain letters by trying to persuade the public that they mean certain things, or shall we say we do not care for the letters? The degree of B.A. has been rendered practically valueless as a degree until we know what institution it comes from. The wisest thing we can do is to say that the letters, apart from the institution, are worth nothing anyway. If a man comes to Yale from another institution that we know a little about and shows his degree, we say: "If you wish it there as a basis of registration for non-collegiate study, well and good. If you wish it for admission to any class, graduate or undergraduate, we propose to examine you somewhat to see what the quality of your work is, and then we will take your certificate from your college; but a degree counts for nothing." My opinion would be that with each institution it is better to make as few changes in the symbolism that goes with the academic degree as possible. I should say to the institution that has one degree: "Keep your one degree." I should say to the institution that has five degrees: "Keep your five. We do not know much about it anyway; but if you change it every year, whether backward from five to one, or forward from one to five, we shall never know anything about it. So the longer you pursue one continuous policy, the better." I do not believe there is any merit in one set of symbols or another set of symbols as compared to the merit of continuity, in having whatever experiment you try keep on long enough to see what it leads to. The degree is valuable, if at all, only in connection with the reputation of the institution, and character is acquired only by continuity. Character is the habit of doing the same thing under the same circumstances.

MR. WEST: This is a subject that interests me very much, because it seems to me that sooner or later, from whatever point of view we approach this question as to the multiplicity or singleness of the Bachelor's degree, we drag to the front almost every other question of liberal education. I cannot see any reason, *a priori*, why the degree of Bachelor of Arts, or Bachelor of Science, or any other Bachelor's degrees, should not be protected by a law so that it may have some definition and

some significance. In other words, a degree is something like a trade-mark; it is academic property, and the better it is defined and understood, the better results can we achieve. I do not want to get into this interminable theoretical discussion, because I am naturally conservative in these matters. But I do feel that, whatever is done in this country about the Bachelor's degree, we cannot blink a certain situation. There are relations of subjects taught, relations of studies; there are preferences of students; there are stages of preparation; there are terms of residence; there are all these elements that are thrown into the melting-pot, and out of some of them we get such and such a university, such a degree; out of others, such a one. We do not all get the same result; perhaps it is not desirable that we should. But if we cannot bring American college education to something more definite in form, and capable of being more commonly understood by the people, it does seem to me that we are going to breed distrust of liberal education. Whatever was to be said against the old four-year prescribed college course—and there was something to be said against it and a great deal for it—this much at least could be said for it: it was concentrated and definite. A few studies which had some demonstrable, rational relation were pursued, and, although the area was narrow, it was one unbroken area, well gathered together. The difficulty now is one of such dispersion and confusion that all possibility of observing experimentally and equalizing the results will be lost, unless we can at least agree on the lines of difference, and the corresponding lines of organization to include those differences.

Now, I can see only three ways to go. There may be others; I confess inability to see them. One is to join hands frankly with President Eliot and go in for one degree and a free elective system—and I think that is a logical outcome; that is one way. Another, and contrasted way—a way to be considered—is to organize the undergraduate liberal education under as many, and only as many, Bachelor's degrees as represent the types which have been evolved with such clearness in the Old World, with more blindness here—as a type in biology, or a type in history. It is clear that that is the other form of organization. Are not these types so clearly discernible that the educational waste is immensely saved by organizing under them, that the intelligence of students is promoted, that students will thus go along the line of their fundamental and main trend? How many Bachelor's degrees then, are needed? First of all, if educational history has taught us anything, it has taught us that the old Bachelor of Arts degree aimed at least at universality—not universality of knowledge, but universality of view, the all-around education; and that meant the training of the man to such openness of mind in regard to different kinds of knowledge, and the substantial value of the particular kinds of knowledge to be acquired, that it gave him an elementary acquaintance with and initiation into that fundamental stock which was the center of our inheritance intellectually. If that is true—and experience can determine with sufficient definiteness the things that must be put in—then your Bachelor of Arts degree would stand as the symbol for that type of education. But this one degree is not enough, because that old trunk has two modern branches: one the modern humanistic, and the other the modern scientific. A large part of the confusion has come from the fact that the first degree organized after the Bachelor of Arts degree, the Bachelor of Science degree, while seeming by its name to be the symbol for a modern liberal education, mainly scientific in tone, was actually so confused with technological elements that in some places it became rather the symbol for an education devoted to the mastery of skill in applied science, bearing on some scientific profession and leading to it; and thus there came to be an incongruous mixture and conflict of liberal and technical things. Courses leading to the Bachelor of Science degree have thus had somewhat of an amorphous and variegated aspect, and you could not tell

whether they were liberal or technical. Until that is settled, your Bachelor of Science degree tends to gravitate in a technical direction, inconsistent with the proper standing of any true university; but in the university these courses must assume the liberal form, or become a force which eats into the mass of liberal studies in the university. However, let us see to it that the Bachelor of Science degree is organized as the modern type of liberal education mainly scientific in character, organized in the same way as the other branch—call it what you like, Bachelor of Letters or Bachelor of Philosophy—as representing the humanistic organization. You keep in these two modern degrees enough modern languages, with their reinforcement of Latin as a basis; you throw a heavy mass of science into the Bachelor of Science degree; and you throw a heavy mass of humanistic studies into the Bachelor of Letters degree. These three degrees are all that are needed, and they are all needed.

Now, what is the trouble in effecting that organization which has been well hinted at in Mr. Hudson's and in Mr. Shorey's papers? The trouble is almost entirely connected with the third degree—whether, after all, that may not become the sink, that course into which men will flow, not because they have a burning desire for modern humanistic studies, but because they want to escape what they consider the drudgery of exact training in classics or science. I suppose that to some extent this is inevitable, but if we look at the experience of other countries, we shall see how they try to handle it.

And there is a third way—not the way of one degree, nor of three degrees. And though I have not been able to bring myself to see the desirability of going toward the single Bachelor's degree with the free elective system, and although I have brought myself to see the desirability of going the way of three degrees, it seems to me that the most dangerous thing that can happen now is to go along the third way, and that is the way of wabbling—of halting irresolutely without really following any rational way. There are many ways of wabbling, and if it is not out of place to refer to so ancient a Greek as Pythagoras, his statement that truth is simple and error is manifold would seem to apply very clearly to this case, and to the proposition that each university go on and make as many university degrees as it pleases. They will do it, of course, but ought they to do it?

MR. HADLEY: I beg pardon. I said, each university might continue what it was doing; not that each university should make as many degrees as it pleased.

MR. WEST: Of course, that will be done anyway; that is I fear about the only thing that is sure. But is it wise to take the position that each university should continue doing as it is now doing?

But let us return to the main question. Is there any other escape from going in the direction of one degree in liberal studies with a free elective system, except by organizing according to the three types that seem to be evolving, or shall we seek to escape the issue by simply wabbling? I think the last is the imminent danger now. Neither parents nor scholars know what this, that, or the other college stands for. If we do not utter something like a certain sound, if at least the colleges that agree do not get together according to their various lines of agreement and say so, how on earth is the public to know for what these degrees stand?

The argument for the teaching of Greek cannot be considered apart from the argument for the teaching of Latin; Greekless Latin is crippled Latin. There should be some one course, some one degree, where the Latin language and literature, if prescribed, should be put in such form that it can be taught in the best way. I do not believe that any man who has ever been connected with classical teaching will deny the proposition that when Greek is withdrawn from the teaching of Latin the

Latin language is crippled and mutilated. If it is desired to have the best Latin, Greek must somewhere be retained. It may be that the percentage of pupils studying Greek is too small to be considered; I am not going to argue that now. But I do say that unless we are going in the direction of one degree we shall have to go for three. If it is not this, it is chaotic confusion.

MR. ELIOT: I am afraid that I differ somewhat from all the gentlemen who have spoken, with regard to the real condition of things in our country. I believe that university degrees were never so highly valued in our country as they are today, and that the increase in the significance and value of degrees within the last ten years is one of the most striking of educational phenomena. It appears in all directions. I infer, therefore, that we are in no dangerous way whatever; that, regarding the interest of our universities, we are in a remarkably good way. The public belief in university education has been strengthened amazingly since I became a college teacher. It is one of the great encouraging changes in our country. I thus reconcile myself very easily to the diversity of practice with regard to degrees. I believe that through this diversity we are gradually approaching the only true goal in education, namely, the carrying out in institutions of Shakespeare's principle:

Small profit comes where is no pleasure taken.

Study, sir, what you most affect.

That principle is going down through all our educational institutions. It began in the higher, and is steadily working its way down to the lower grades. For fifty years at Cambridge we have had two Bachelors' degrees—Bachelor of Arts and Bachelor of Science. Now, the main difference between those two degrees has, until lately, always been this: the Bachelor of Science simply meant an inferior secondary education, followed by an inferior college education. The Bachelor of Science degree has always been inferior to the Bachelor of Arts degree in our country. There have always been lower terms of admission for it, and the inferior condition at eighteen was then prolonged to an inferior course of study. At Harvard we have been for the last fifteen years steadily escaping from that condition of things, and I think the same process has been going on in different ways all over the country. These inferior degrees have been coming up to a level with the old degree, and these inferior secondary-school courses have been approaching a level with the classical course in the secondary schools. At Harvard we have lately increased the requirements for admission to the Lawrence Scientific School, until now they actually represent as thorough and good a preliminary training in the secondary school as do the requirements for admission to Harvard College. We make the same demand of the secondary school for admission to the Lawrence Scientific School that we do for admission to Harvard College, and we have succeeded in doing this without diminishing sensibly the resort to the Scientific School.

Within the university itself we have made the four-year course for the degree of Bachelor of Science more difficult than the existing course for the degree of Bachelor of Arts. The degree has not the reputation of the Bachelor of Arts degree; it is of lower value in the community at large; we want to make it of equal value.

We look forward to another step, to which Mr. West has alluded. If the secondary education and the education during the college period can be made equally good for these two degrees, why have two? In my judgment, there is no good reason under those conditions for having two. There has always been a good reason for it in the past, but the time is coming when there will be no good reason for two degrees representing the sort of training which a college gives. There need be

no distinction between the sort of training which is now given in a public high school and subsequently in a scientific school, and the other sort of training which is given in what is called a preparatory school, followed by a classical course in college. The same sort of power is developed in both courses, the same intellectual grasp is given, the same power of work. There will be no reason for giving two degrees; we shall all use one, and that will be the traditional degree of Bachelor of Arts.

I most cordially agree with Mr. Shorey in everything said about Greek. I have never taken any part in the vulgar denunciation of Greek, and I have always believed just what Mr. Shorey believes with regard to the indebtedness of mankind to that literature. But does that belief carry as far as this, that young Americans of our century should be compelled to study Greek? Not for me. The argument for me as to the merit of Greek simply proves that the study of it by competent persons will never cease, that it will always remain a precious element in university education. It has been supposed that the working out of the elective system at Harvard had an unfriendly side toward the ancient languages. Far from it. We spend more money on the Classical Department at Harvard than on any other department except that of the English Language and Literature, and we have a stronger department in professors and assistant professors of the classics than any other. This condition of things may be somewhat modified as the generations pass; but can any of us believe that the classical departments of our universities are going to become weak and feeble, and that little money is to be spent on them? Not if we believe in the supreme excellence of the Greek period and its fruits.

It has lately seemed to me that the progress of the elective system downward through the secondary schools is almost too rapid. The methods adopted have hardly had time to perfect themselves before a new change has been brought in. One of the quickest of these movements in its workings has been the organization in many public high schools of group courses. That is one way in which the elective principle has worked downward. I feel no anxiety about the results of these changes. Have we ever had in our country as good a total result of education—the elementary, secondary, and university—as we have today? Has education ever been as good as it is today? Have the professions of the country ever had more influence than they have today? Have we ever had men of higher skill directing the professions? Have we ever had a higher public spirit among the educated classes? I believe not. Why are we anxious about the tendencies of education in any grade? We have seen the most astonishing improvements in the lowest grades of education. The primary schools of today are infinitely better than they were when I was a member of the Boston Primary School Committee in the year 1854. In short, I believe that all these diversities, and, if you please, confusions, tend in one direction, namely, to a more perfect observance of that fundamental principle in education, that the endeavor should be made to direct education from the beginning to those things which the boy or youth can do best, and never to the things that he cannot do. That principle governs us all when we are a little older and ask what profession an educated youth shall choose. Do we not all say that profession for which he is most capable and which will most interest him, to which he can devote his powers with the greatest satisfaction? That is the principle which we should think it crazy to disregard when the life-career is chosen. That is the principle to which the whole tendency of American education now, from top to bottom, is giving effect.

MR. WHEELER: The question of multiplicity of degrees is a very different one when viewed from the point of view of a university like the University of California, which has started with a

number of degrees, and when viewed from the point of view of Harvard and Yale, with their essential singleness of degree—the second degree being practically lodged in the keepership of a special institution or school somewhat lacking in prestige. The degree of B.S. at the California University has suffered in no whit from being associated with any institution lacking in prestige, or any part of the University so lacking. It is not in a separate school. It was not so at Cornell; it is not so generally in the state universities. We started with the multiplicity of degrees, and now the question comes: Shall we merge those degrees and those colleges representing the degrees into one? At the present time in the University of California we give, in what you would call the colleges of arts and science, that is, the colleges of general culture, the three degrees of Bachelor of Science, Bachelor of Letters, and Bachelor of Arts. The degree of Bachelor of Arts is given only for those who have Greek and Latin for admission and to a very considerable extent, too, in the University; and I know of no very strong disposition to make any change in that situation. The degree of B.A. is not, under the circumstances existing there, under storm; there is no one attempting to beat down the gates and gain admission to the degree. The degree of Bachelor of Science is of recognized good standing; I am not aware that it is not of just as good standing as the degree of B.A. We have, however, in process of time made considerable change in our conditions, in that the three colleges representing the three degrees have drawn together, and for two distinct reasons. The first of these is the progress of the system of free election of studies from the top toward the bottom. This progress has come about as it comes about everywhere where schools or colleges are large. Large numbers of undergraduates are assembled together, a large number of subjects of instruction are represented by a large number of teachers in the faculty, and each one of those teachers naturally becomes, to a greater or less extent, an attorney for his subject and a representative of a department which must be fed with students. It is perfectly clear to us that this progress of election from the top toward the bottom is very greatly aided by the tendency described, and that it is destructive of the orderly tendency toward making curriculums or group systems, whatever they may be.

On the other hand, there is developing with us equality in the conditions of admission to the three colleges. Practically they are now the same. We require Latin for the College of Natural Sciences, the course which leads to the degree of B.S., precisely as we do for the other colleges. There is essentially no difference in the requirements for admission except that Greek is required for those who are candidates for the degree of B.A. In other words, the three colleges are becoming equalized from both ends, and those who dread tendencies are quickening their pulse with reference to the question what is to be done in the matter of degrees. Shall we not, after all, give one degree, B.A., for those three colleges? I must confess that I see no barrier now except this same old difficulty of Greek. Greek is a stumbling-block with us. Shall we keep the degree of B.A. and all this separateness merely for the sake of Greek?

A great deal of injury is being done to Latin and Latin instruction by the dropping of Greek. We have a great deal of trouble in California with Latin teachers in our public schools who do not know Greek, or know very little of it. There is no life in the classics except the life of Greek. That is the thing that throbs, that has blood in it. The thing we call classics is really Greek, even if it is in a Latin guise. The Latin literature that is of value to us is practically the Greek literature translated. Latin teachers who neglect their Greek generally go to seed, to intellectual death. They generally resort to a form of syntax which is nothing more than a superficial linguistic psy-

chology, and satisfy themselves with that, and kill the classic enthusiasm with that. Today the decline of the classics in our universities, I think, is more due to that substitution of syntactical psychology for classics than to any other thing. A study of Latin and the teaching of it, if it is going to be vital, has got to be essentially Hellenic. On that account I believe there is a reason for the maintenance of the degree of B.A. at the University of California for the present, in order that it may stand for a humanistic education which is essentially Hellenic, which is based on the spirit of Greece and Greek literature. Therefore I shall for the present strongly believe in the maintenance of the degree of B.A., as distinguished from the degree of B.L. or B.S., for our purposes and our use.

MR. HIBBEN: In the discussion this morning, the phrase "unrestricted liberty of choice" has very often been used. I think that attention should be called to the fact that when the electives are opened to students without any external restriction, there is still a very serious inner restriction that I would speak of as the restriction of the man's ignorance. The responsibility is placed upon the university which receives the student to lead him through some kind of pressure—it may not be great pressure, but at least some pressure—to a position where he is able to make a wise choice. The mere fact that he has liberty of choice, if he is not able to make a wise choice, is not desirable.

MR. SHOREY: President Eliot, of course, would not suspect me of accusing him of having joined in the grotesque and ignorant denunciation of Greek; but at the same time he must be aware that my representation of that attitude toward Greek in recent educational literature is not a caricature. It is a plain representation of the facts, and my argument, which was perhaps a little subtle, was at least definite—that is, that the B.A. degree is not a compulsion for anybody to learn Greek. It is at most but a guidepost to one of the avenues of choice, to very many minds, a very desirable post to maintain in view of this vulgar denunciation of Greek which threatens to turn the scholar in the wrong way. There were many other arguments in my paper, but it is impossible for me to repeat them. I do not think they have been actually met by the repetition of the statement that the election principle is the only principle that is, in political parlance, "sure to pass."

MR. ELIOT: I should like to add to what I said before a word about signposts and groups. It is a very natural idea that experienced teachers should be able to make groups of subjects which they can recommend to youths who are looking forward to education, but have no experience in it, and who might be supposed to be less capable of laying out their own path. There is no more natural idea than that, and none that I have listened to oftener during the last thirty years of this discussion. There have always been in our faculty men who held the view in the strongest way that grouping ought to be possible, that groups ought to be wisely made by the faculty and set before the youth, if not by way of prescription, at least by way of advice. That question came up again three years ago, and we gave a good deal of time to the discussion of it. The question was settled by finding that nobody was willing to make the groups. We could not find anybody who was willing to lay down, for example, the group that should be followed by the student who was going to be a literary man. We could not even agree on who should make the group for the men who knew they were going to be physicians. The professors of law declined to make a group for those undergraduates who knew they were going into the Law School. That is the fundamental trouble with the group system. With more and more experience, the conclusion, furthermore, is gradually arrived at that no wise advice can be given to a young man looking forward to his edu-

tion which does not make the study of that young man the fundamental object, the fundamental guide. That is my conclusion. I am absolutely unwilling to advise a youth to take a given course through the elective system, unless I have time and means of studying that youth. That is the reason why I believe that faculty groupings are almost always misfits. Clothing cut out by machinery on patterns never fits a single individual.

MR. WEST: May I ask a question of President Eliot in connection with the difficulty of grouping? If I have understood correctly, President Eliot's position is that it is the business of that youth in college, in his undergraduate career, to take the studies which are of most advantage to him; that is to say, if he is an intending lawyer, the liberal studies underlying law. There are a great many on which there can be agreement, and on which there should be, if not prescription, at least advice. Would that fit in with this other argument? When a young man knows his purpose, are there not certain things that are related to the study of law that he could be advised to take?

MR. ELIOT: There certainly are things that a young man destined for the law can be advised to take in college, if he is through with his sampling period and knows where he is going. But the difficulty of making prescribed or recommended groups is this, that there are altogether more things which are fitted for a youth who is going to be a lawyer than he can possibly study. It is just so with the youth who is going to be a physician or surgeon. There are a great many more things taught at Harvard College fitted for a young man who is going to be a physician than he can possibly take. The choice is too rich, and no agreement can be reached as to what particular few courses, such as the individual can take, shall be recommended to him. Experience has absolutely established at Cambridge that the natural limitations and guides are so strong, so clear, that the youth who has a bent or a tendency makes his own group without serious danger of harm. If he makes a mistake under the elective system, it is a mistake perhaps on one course, at the outside on two courses, and he corrects it quickly. If he makes a mistake in selecting a group and cannot change his group, he is in a bad way.

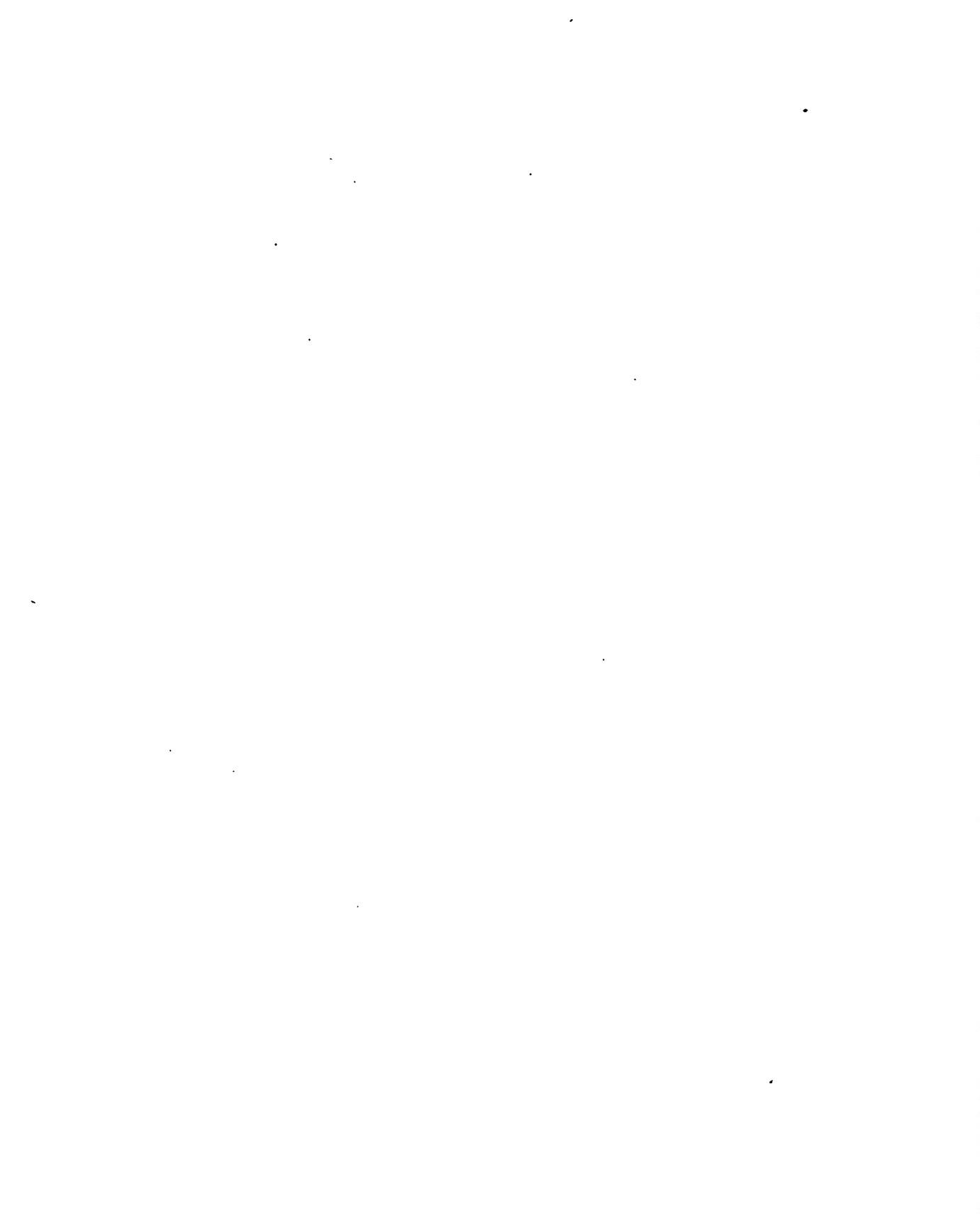
MR. WHEELER: I think what Mr. Eliot has said further illustrates that this breaking up into what is called the free elective system is a phenomenon of the large institutions. It is so with us regarding high schools. There is no tendency to break up into electives in the small high schools; they will accept a curriculum and are glad to get it. In the large high schools something approaching toward election is coming about; and in the university we have found that, as we have grown big in numbers of students and teachers and subjects, we have not been able to make the group system work as it was originally devised. It comes to be a lot of pattern cuts, and we cannot manage to fit those on to the great variety of physiognomies of the bodies that we have to deal with. The group system is a failure, I should say, at the University of California, just as it is at Michigan.

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*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The Sixth
Annual Conference*

1911-1912



The Association of American Universities

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SIXTH ANNUAL CONFERENCE

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JANUARY 12-14
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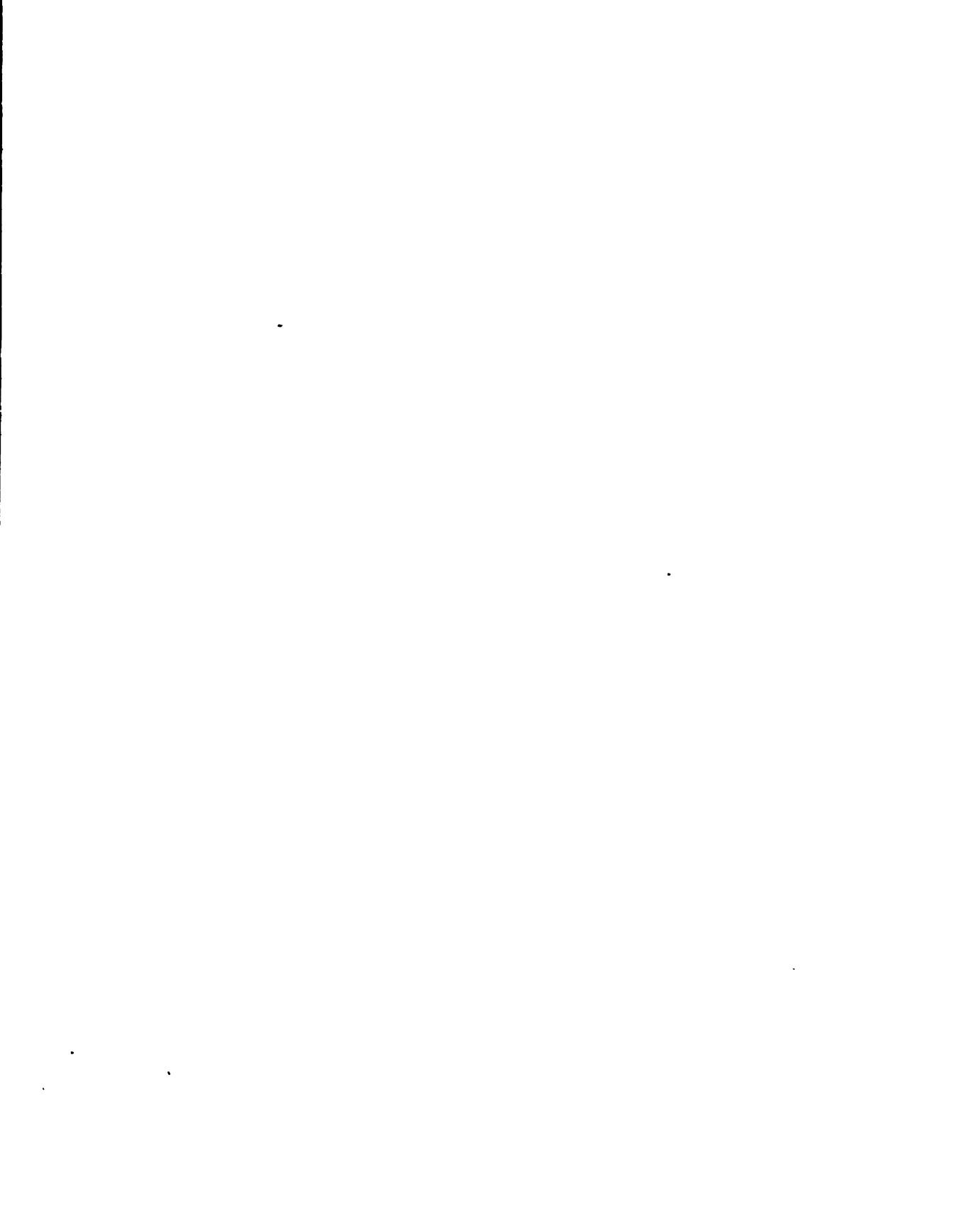
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MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois

CLARK UNIVERSITY,
Worcester, Massachusetts

COLUMBIA UNIVERSITY,
New York, N. Y.

CORNELL UNIVERSITY,
Ithaca, N. Y.

HARVARD UNIVERSITY,
Cambridge, Massachusetts

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland

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Palo Alto, California

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania

PRINCETON UNIVERSITY,
Princeton, New Jersey

UNIVERSITY OF VIRGINIA,
Charlottesville, Virginia

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin

YALE UNIVERSITY,
New Haven, Connecticut

CALENDAR OF CONFERENCES

FIRST ANNUAL CONFERENCE (organization),
Chicago, February 27, 28, 1900

SECOND ANNUAL CONFERENCE,
Chicago, February 26-28, 1901

THIRD ANNUAL CONFERENCE,
Chicago, February 25-27, 1902

FOURTH ANNUAL CONFERENCE,
New York, December 29-31, 1902

FIRST ANNUAL CONFERENCE,
New Haven, February 18-20, 1904

SIXTH ANNUAL CONFERENCE,
Baltimore, January 12-14, 1905

OFFICERS

1905-1906

President—The representative of the University of Wisconsin.

Vice-President—The representative of Cornell University.

Secretary—The representative of Columbia University.

Additional members of the *Executive Committee*—The representative of Princeton University;
the representative of Leland Stanford Junior University.

THE SIXTH ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

THURSDAY, JANUARY 12, 1905

MINUTES

The delegates were received by the representatives of the Johns Hopkins University, at 1 P. M., in McCoy Hall, and were the guests of the University at luncheon, at 1:15 o'clock.

FIRST SESSION

The First Session was called to order in McCoy Hall, at 2:00 P. M., with Mr. Remsen, of the Johns Hopkins University, in the chair.

The following representatives of the Universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Irving Stringham, Mr. A. O. Leuschner

UNIVERSITY OF CHICAGO—Mr. William R. Harper, Mr. Albion W. Small

CLARK UNIVERSITY—Mr. G. Stanley Hall

COLUMBIA UNIVERSITY—Mr. Munroe Smith, Mr. William H. Carpenter, Mr. Henry M. Howe, Mr. F. P. Keppel

CORNELL UNIVERSITY—Mr. Thomas F. Crane

HARVARD UNIVERSITY—Mr. James Barr Ames, Mr. Thomas N. Carver

JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen, Mr. B. L. Gildersleeve, Mr. William Henry Welch

UNIVERSITY OF MICHIGAN—Mr. A. C. McLaughlin

UNIVERSITY OF PENNSYLVANIA—Mr. Josiah H. Penniman, Mr. J. C. Rolfe, Mr. Clarence G. Child

PRINCETON UNIVERSITY—Mr. Andrew F. West, Mr. W. M. Daniels

LELAND STANFORD JUNIOR UNIVERSITY—Mr. Ellwood P. Cubberley

UNIVERSITY OF VIRGINIA—Mr. James Morris Page

UNIVERSITY OF WISCONSIN—Mr. Charles R. Van Hise

The minutes of the preceding Conference were approved as printed.

The Executive Committee presented its report with regard to the resolutions referred to it at the Fifth Annual Conference. Upon motion, the REPORT of the Executive Committee, amended to read as follows, was accepted:

At the Fifth Annual Conference of the Association of American Universities held at New Haven, February 18-20, 1904, the following resolutions were adopted:

The Association of American Universities

1. *Resolved*, That the question of holding future meetings of the Association annually or biennially be referred to the Executive Committee.

2. *Resolved*, That the Executive Committee be requested to consider the whole question of membership, including the purposes of this Association, and to make a report at the opening session of the next meeting of the Association.

The Executive Committee has given careful consideration to the questions involved in the second resolution, and has endeavored to obtain through correspondence the opinions of the several members of the Association upon them. The following report embodies the opinions of a majority of the members:

The Executive Committee would recommend:

1. That the Association deal with advanced instruction as a whole, as contrasted with collegiate instruction.

2. The Committee recognizes that while there is a general sentiment that a considerable increase in membership would lessen the efficiency of the organization, and while about one-half the members of the Association feel that the present membership is adequate for a discussion of the problems in which the Association is interested, there is still a strong sentiment that other institutions should from time to time be elected to membership in the organization. No formal declaration of principles as to eligibility other than the announced purposes of the organization, and no definite numerical limitation as to membership seem to be necessary.

The Executive Committee does not feel that it would be advisable to change the name of the organization.

Respectfully submitted,

IRA REMSEN

IRVING STRINGHAM

WM. H. CARPENTER

JAMES BARR AMES

The recommendation of the Executive Committee that for the future the meetings of the Association be held biennially, was laid on the table.

The Secretary announced the receipt of the following communication from the Faculty of Philosophy of the University of Berlin:

BERLIN, Juli 1904.

Die Philosophische Fakultät der Friedrich-Wilhelms-Universität beeht sich, die nachfolgenden von ihr am 18. Juli d. J. beschlossenen

AUSFÜHRUNGSBESTIMMUNGEN ZUR PROMOTIONSORDNUNG

zur Kenntnis zu bringen:

1. Die Fakultät erkennt jeden an einer amerikanischen Universität erworbenen Bachelor-Grad (B.A., B.Sc., u. a.) als Äquivalent eines deutschen Maturitätszeugnisses an.

2. Auf das vorgeschriebene Triennium wird die Fakultät bei der Befürwortung des erforderlichen Ministerialdispenses in der Regel nur diejenigen amerikanischen Studienjahre in Anrechnung bringen, welche nach Erwerb des Bachelor-Grades an einer derjenigen Universitäten zuge-

bracht sind, die der Association of American Universities angehören. Mindestens drei Semester muss der Kandidat jedoch an einer deutschen Universität studiert haben.

Der Association of American Universities gehören zur Zeit folgende 14 Universitäten an:

Harvard University—Cambridge bei Boston, Massachusetts
Clark U.—Worcester, Massachusetts
Yale U.—New Haven, Connecticut
Columbia U.—New York City
Cornell U.—Ithaca, New York
Princeton U.—Princeton, New Jersey
U. of Pennsylvania—Philadelphia, Pennsylvania
The Johns Hopkins U.—Baltimore, Maryland
Catholic U. of America—Washington, D. C.
U. of Michigan—Ann Arbor, Michigan
The U. of Chicago—Chicago, Illinois
U. of Wisconsin—Madison, Wisconsin
U. of California—Berkeley, California
The Leland Stanford Junior U.—Palo Alto, California^a

Upon motion, it was

Resolved, That the Secretary be instructed to inform the Faculty of Philosophy of the University of Berlin annually of the action taken at the Conferences of the Association of American Universities.

The Secretary announced informally that the Dutch Government had taken official action, promulgated by Royal Order of February 12, 1904, to the effect that hereafter all American students holding the degree of Bachelor of Arts from one of the institutions included in the Association of American Universities shall be admitted to the Dutch universities under all Faculties without examination.

Upon motion, the Chair was authorized to appoint a Nominating Committee.

Mr. Leuschner, of the University of California, and Mr. Keppel, of Columbia University, were requested to prepare reports of the meetings for the press.

^a TRANSLATION.—The Faculty of Philosophy of the Friedrich-Wilhelms-Universität (Berlin) have the honor to notify you of the following regulations concerning candidacy for the Doctor's degree, adopted on July 18, 1904:

1. The Faculty recognizes every baccalaureate degree (A.B., B.Sc., etc.) acquired at an American University as the equivalent of the German *testimonium maturitatis*.

2. In order to have graduate work pursued at an American university credited by this Faculty, upon proper approval of the ministry, toward the three years of study prescribed by this University for the degree of doctor of philosophy the candidate must have taken his graduate work at one of the institutions represented in the Association of American Universities. The candidate must, however, have been in residence at a German university for at least three semesters.

The Association of American Universities is at present composed of the following fourteen institutions:

....

The Association of American Universities

The Chairman announced that the privileges of the University Club of Baltimore had been extended to the delegates.

The session adjourned at 4 P. M.

In the evening the delegates were guests of Mr. Theodore Marburg, Trustee of the Johns Hopkins University, at a reception given at his residence, No. 14 Mt. Vernon Place.

SECOND DAY'S PROCEEDINGS

FRIDAY, JANUARY 13, 1905

MINUTES

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held on Friday, January 13, at 9:45 A. M., in President Remsen's office.

There were present the following members of the Executive Committee:

For JOHNS HOPKINS UNIVERSITY—Mr. Remsen
 For COLUMBIA UNIVERSITY—Mr. Carpenter and Mr. Keppel
 For HARVARD UNIVERSITY—Mr. Ames
 For UNIVERSITY OF CALIFORNIA—Mr. Stringham
 For CLARK UNIVERSITY—Mr. Hall

The Secretary presented the following FINANCIAL REPORT which, upon motion, was approved:

Receipts:

From 15 assessments of \$40 each for the institutions represented in the	
Association	\$600.00
Balance on hand	<u>56.39</u>
Total	\$656.39

Expenditures:

For printing circular of Executive Committee	\$ 8.25
For stenographic service at Fifth Annual Conference	69.40
For telegrams, postage, and sundries	8.11
For printing 800 copies of Proceedings of Fifth Annual Conference	252.57
For express charges, receipt and distribution to 15 institutions of above	
Proceedings	13.60
For exchange on cheques . . . . .	.48
Balance on hand, January 3, 1905	\$352.41
	<u>\$303.98</u>

Upon motion, it was

Resolved, To recommend to the Association that each member be assessed \$25.00 to provide for the expenses of the coming year.

The Secretary was authorized to increase the edition of the Reports of the Conference to 1,000 if it should be desirable to do so.

Upon motion, it was

Resolved, To recommend to the Association that the time for the next meeting be between January 10, and January 25, 1906.

Upon motion, it was

Resolved, To recommend to the Association that the President of the Carnegie Institution be invited to be present at all future meetings of the Association.

Upon motion, it was

Resolved, That the following report be presented to the Association with regard to certain institutions nominated for membership at the Fifth Annual Conference:

The Executive Committee does not think it advisable at this time to recommend any additional institutions for membership in the Association.

The Committee adjourned at 10:15 A. M.

SECOND SESSION

The session was called to order, at 10:30 A. M., with Mr. Remsen in the chair.

The following delegates were present in addition to those at the preceding session:

For the CATHOLIC UNIVERSITY OF AMERICA—Mr. Maurice Francis Egan, Edward A. Pace.

For YALE UNIVERSITY—Mr. Arthur T. Hadley.

Mr. Henry M. Howe, on behalf of Columbia University, presented a PAPER on "The Organization of Higher Technical Education."

The following delegates took part in the DISCUSSION of the paper: Mr. Remsen, Mr. Hadley, Mr. Howe, Mr. Van Hise, Mr. Stringham, Mr. Penniman, Mr. Hall, Mr. Crane, Mr. Leuschner, Mr. Carver.

The financial report of the Executive Committee was accepted, and the several recommendations of the Committee to the Association and the report as to membership were presented, and each, upon motion, was adopted. (See pp. 10-13.)

The names of certain institutions were presented to be considered by the Executive Committee under the rules.

The Chairman announced as the Nominating Committee: Mr. Harper, Mr. Ames, and Mr. Carpenter.

A general discussion as to the time and place of the next Conference was held. Invita-

tions to the Association were extended on behalf of the University of Wisconsin, Princeton University, University of California, University of Chicago, Harvard University, and Leland Stanford Junior University.

Upon motion, it was

Resolved, That the time and place of holding the next conference be left to the new Executive Committee, with the expression of opinion that it would be well, if practicable, to hold the meeting farther west than the Atlantic seaboard.

The session adjourned at 12:30 P.M., after which the delegates were the guests of the President of Johns Hopkins University and Mrs. Remsen at luncheon, at No. 214 West Monument Street.

THIRD SESSION

The session was called to order at 2:30 P.M. by Mr. Remsen.

Mr. Small, on behalf of the University of Chicago, and Mr. Hall, on behalf of Clark University, presented PAPERS on the following subject: "Construction in Graduate Schools."

The following delegates took part in the DISCUSSION: Mr. West, Mr. Munroe Smith, Mr. Page, Mr. Crane, Mr. Harper, Mr. Van Hise, Mr. Remsen, Mr. Carver, Mr. Hadley, Mr. Penniman, Mr. Small, Mr. Hall, Mr. Stringham, and Mr. Cubberley.

The Committee on Nominations reported as follows:

For *President*—A representative of the University of Wisconsin.

For *Vice-President*—A representative of Cornell University.

For Members at Large of the *Executive Committee*—Leland Stanford Junior University; Princeton University.

The nominations of the committee were accepted and the officers nominated were declared elected.

The Chairman requested that suggestions from the delegates as to suitable topics for discussion at the forthcoming conference of the Association be handed to the Secretary.

The session adjourned at 5 P.M.

The delegates were the guests of the President and Trustees of the Johns Hopkins University at dinner, at 7:30 P.M., at the Maryland Club.

THIRD DAY'S PROCEEDINGS

SATURDAY, JANUARY 14, 1905

MINUTES

FOURTH SESSION

The Fourth Session was called to order by Mr. Remsen at 10:30 A. M.

Mr. Van Hise, on behalf of the University of Wisconsin, and Mr. Page, on behalf of the University of Virginia, presented PAPERS on the following subject: "The Opportunities for Higher Instruction and Research in State Universities."

The following delegates took part in the DISCUSSION: Mr. Hall, Mr. Van Hise, Mr. Carver, Mr. West, Mr. Stringham, Mr. Remsen.

Upon motion, it was

Resolved, That the Association of American Universities places on record its grateful acknowledgment of the comfortable arrangements and abundant social enjoyments provided at this session of the Association by the Johns Hopkins University, The University Club, The Maryland Club, and the many hospitable homes of Baltimore.

The motion was adopted in a rising vote.

Upon motion, the session adjourned at 12:35 P. M. *sine die*.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held at the Johns Hopkins University at 12:40 P. M., January 14.

The following representatives were present:

For University of Wisconsin, *President*—Mr. Van Hise.

For Cornell University, *Vice-President*—Mr. Crane.

For Columbia University, *Secretary*—Mr. Carpenter and Mr. Keppel.

For Princeton University—Mr. West.

Upon motion, it was

Resolved, That the matters referred by the Association to the Executive Committee be treated in the usual manner by correspondence.

The meeting adjourned at 12:50.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE SIXTH ANNUAL CONFERENCE

SECOND SESSION

THE ORGANIZATION OF HIGHER TECHNICAL EDUCATION

PAPER PRESENTED BY HENRY M. HOWE, OF COLUMBIA UNIVERSITY

Will technical schools serve the interests of the community better if they are parts of great universities or if they are isolated institutions? Is association or isolation more to the public good?

Unfortunately these questions do not present themselves thus sharp-cut to the majority of those who have directly or indirectly a voice in the matter, such as the great body of alumni, who have given little close thought to educational questions since graduation, and probably little before. If they are the electors of the overseers, trustees, or corporation of their Alma Mater, their opinion has great and not very indirect force; even if they are not the electors their opinion is by no means to be neglected.

Is a definite plan of association proposed? The majority of those interested at once ask, not "Is this to the public good?" but "How will it affect my beloved Alma Mater? Will she be eclipsed, overshadowed? Will she lose her identity, her individuality? I loved her in my youth, in those golden days when affections struck their roots deep, and I loved her as she was, and because she was what she was. I would have her grow in size and above all in glory; but I would have her always her own dear self, with her own characteristics." They are not so extreme as the lover who sees every blemish of his Beatrice as an immaculate charm, the Titania to whom Nick Bottom is an Adonis; not so extreme, but in them in a minor degree is this same blessed distorting sentiment. That this strong people—this segregate formed by that great selecting force which has brought to a new, free, and rich land the more energetic, courageous, and active members of millions of European households, leaving as a residuum the less energetic, those of less enterprise—that this people for all its strength and dash is still eminently a people of sentiment, is its greatest glory. But noble and welcome as sentiment is when applied to human beings, it is often

most confusing when applied to inanimate objects and to abstractions. Though much of the strength of the free-silver craze was due to a wish, often subconscious, to evade full payment of just debts and to other sordid motives, it yet seemed in no small part due to a befogged but chivalrous wish to do something for an oppressed and downtrodden metal, to a fuddled cherishing of the time-hallowed dollar of our fathers. We are for the under dog.

Alumni, in approaching this question, should make allowance for a bias to which trustees and fellow-alumni of prominence in the affairs of their Alma Mater are subject. Even the most conscientious of these, he even at once so unselfish and so judicial that dread of loss of his own influence or prestige has no weight with him, yet, being human, is subject to bias through belief that he and his present associates, in view of the long acquaintance with the work, can manage their institution more wisely, more to the public good, than any other body of men. But no one of us is a competent judge of his own superiority.

I may be captious if I complain of the blindness of your affection for your Alma Mater when it leads you to endow gymnasium, scholarship, or chair; I certainly find it hard to turn you when you will see her as a personal being, to be loved and cherished as such, and not as an inanimate thing, almost an abstraction, a means and only a means to the end of supplying the community with trained youths. You see and touch her buildings, her ground, her teachers, her students, her trustees; you hear her traditions; you recognize her influence; but you can neither see, hear, feel, nor touch her very self. Has she a very self? Where and what is it? Is it a spirit? If it is, in what body does it reside, and what single act has it ever done, as distinguished from those of its officers? Does this spirit reside in its charter? Yes, as much as yours does in your certificate of baptism.

Look at it fairly. Certain benevolent men wish to facilitate education; they love their community, which, mark you, is composed of human beings, of real flesh and blood, and is no abstraction, no means to an end. They would better this community by aiding it to train its youths. They give to that end; to that end certain wise men of affairs, trustees, or overseers, give freely of their time and thought to directing the use of this money for this same end. They engage a great administrator and scholar to work for them for this same end; with his counsel they engage many teachers, always to this same end.

Dormitories, lecture-rooms, and laboratories spring up; youths come, are trained, pass on to usefulness, and are succeeded by others.

Here is an institution of learning: what are its parts? First, the purpose, cause, or end of training youth for the benefit of the community, underlying, encompassing, dominating every other part. Toward this the deepest devotion is due. Second, human beings, founders, trustees, teachers, alumni, students, toward all of whom sentiment is reasonable, whose rights are to be respected; all are supposed either to be working for this end, the training of youth, or to be the product of that training. Third, buildings, trees, and grounds, inanimate things, yet after all, things toward which sentiment is as natural as toward the inanimate home in which we have lived, the rackets, clubs, and guns of our pastimes. Fourth, an abstract mechanism, an organization, a scheme through which founders, trustees,

teachers, students, and perhaps alumni, are enabled to work together effectively toward this same end, bettering the community through the training of youth. But how far is sentiment reasonable toward such a mechanism, apart from its work? A concrete mechanism, a locomotive of Stephenson's, because of its concreteness you may preserve unchanged as a monument to its inventor, or as an instructive curiosity; but an abstract mechanism, a procedure, formula, or constitution you do not hesitate to amend, erase, or combine with another, if this is to the good of its beneficiaries, in the present case, the community.

Is the whole greater than the sum of its parts? What other thing is there in this institution besides its purpose, its men, its property, and its organization? Its traditions? But are not these simply manifestations or products of the interaction of these essential parts, purpose, men, property, and mechanism? And after all do they not exist solely that they may serve the underlying purpose of training, and are they not to be modified, if through modification they will serve that purpose better? Let us not dispute as to names if we agree as to facts.

If I am right, what weight should we assign to the effect of a proposed coöperation, affiliation, or association, on each of these several parts of an institution?

To its effect on the mechanism, the organization, the constitution, sharply distinguished from the men who work in it, or if you prefer who are part of it, absolutely no weight. Anything may be a fetish; but reasonable consideration of a mechanism asks only how well it effects its purpose. It exists not for itself, but solely for its purpose, which in this case is to benefit the community.

The effect on the property, real and personal, is likely to be insignificant; we may pass it by.

The weight to be attached to the effect on the several classes of men must be found by considering these classes separately.

The founders and benefactors? Let us not dishonor them by assuming that they gave in vanity to perpetuate their names, which quickly become mere sounds; or that in vanity and selfishness they could wish to impose their will, their conception, their policy, the weight of their dead hands, on their trustees, to hamper them in the wise conduct of their trust in the clearer light of later days, when experience and experiment shall have unraveled the early tangles, when opportunities of greater usefulness shall have arisen. Let us do as we would be done by, and assume that those generous givers would generously, nay reasonably and naturally, wish their gifts to be used for carrying out the purpose for which they gave them, the bettering of the community through the training of youths in the way which shall at any later time be found the wisest.

If, then, founders and benefactors had no strong wish other than this benefit of the community, in considering them we have but to consider this benefit.

The trustees? We may assume that the generous gift of their time and counsel springs from like motive with that of the founders and benefactors; their cases are alike.

The young alumnus? Because his diploma is valuable evidence of his merit, to dis-

credit it would be unjust to him. But its value rightly rests upon the standing of its issuer at the time of issue, and it is hard to see how this standing is to be materially affected in the few years in which the diploma is of use, by any coöperation or even merging which is truly to the public good. After a very few years the alumnus is rightly judged almost solely by his later achievements, and not by his diploma. We ask always for a servant's recommendation from his late employers, not from those of years ago. The case of the older alumni, those grown sons, should be like that of the founders, benefactors, and trustees.

The teachers? If the plan proposed is wise, the best teachers will find through it a wider field of usefulness. Of the others a certain proportion would through association become superfluous. But this superfluity would quickly disappear through the usual processes of promotion, transfer to other institutions, and retirement, and to provide temporarily for it should not tax the ingenuity of the president.

If I am right then, in considering any specific plan its effect on the public welfare should receive almost our whole attention.

But even if you will not hold with me in detail, you may in effect. If you attach great importance to retention of individuality, consider well the details, and ask whether they really tend to efface it. Coöperation and association do not necessarily imply loss of individuality or essential change of character. A member of a firm or of a family is indeed influenced by his associates, but loses neither his individuality nor his inborn character. The alumni of the schools of Applied Science of Columbia have their own organization distinct from that of the Columbia College graduates. It is said that changing the connection between Columbia University and its College of Physicians and Surgeons from a nominal to a close working union, while it has aided the evolution of the character of this branch, yet has not sensibly lessened either its individuality, or the *esprit de corps* of its students and graduates. As between peoples the intimacy of association varies widely, from the simple zollverein, through unions such as that of our own country, to complete effacement like that of Carthage, so it may be with learned institutions. Has Massachusetts or New York suffered loss of character or individuality through its union with the other states? Would Cuba? Has the eclipsing or overshadowing of Rhode Island been increased by the union?

Do not assume that because association might conceivably efface one of the parties, it necessarily must, but judge each case on its merits. What do you call him who flies blindly from the path of greater usefulness, yes and greater glory, fearing a lion, without stopping to see whether the beast which his fears picture really exists? Which attitude will you take: will you from prejudice, dislike, resentment, or other cause seek reasons against association; or will you ask how best it may be so framed, that while giving its great promised advantages, it may not destroy the individuality which you prize? Will you seek the new while safeguarding the old? Will you not say

"Build thee more stately mansions, O my" school?

May not schools

Rise on stepping stones

Of their dead selves to higher things?

Returning to our first question, Should technical schools serve the public welfare better if they are parts of great universities, or if they are isolated institutions?

Let us assume that the university in question deserves its name, having first, a college or academic department and a department of pure science, and second, other important departments, such as schools of law and medicine, together with advanced instruction in many fields.

First, let us consider the interaction of the teachers. The practice of the arts taught in technical schools, arts with a scientific basis but still arts, is more nakedly for money-making than that of the other professional arts. Medicine heals and raises, law protects the oppressed, dispenses both justice and wisdom from the bench. Even as the servant of finance it has to do rather with the protection and the transfer of wealth already existing than with the creation of new wealth, with the fruits of industry rather than with their growth.

But the technical man is always occupied with questions of profit and cost, of making money for his employer, or of building as cheaply as his standard of quality will permit. The merit of every plan is measured in dollars, be it mining and smelting, manufacturing, transportation, or agriculture. The subject must be taught from this standpoint. Our graduates must be efficient money-makers; but it is still more important for the community that they should be liberal citizens. As the work makes for things earthy, so is it the more our duty to anticipate and offset this tendency, and to strive to give generous and wide views. I charge my students to read poetry, hear good music, see works of art; so will they become better metallurgists, for nine-tenths of their work will have to do with men, and only one-tenth with metals and mechanisms.

Surely it is for the good of the community that the technical teachers should have the softening and broadening influence of contact and work with teachers of the humanities and of pure science, with men to whom the ever-present money question is of secondary importance, to whom beauty is more and money less; for so will they in turn influence their students more broadly and humanly; so will their light be whiter and their precepts and example nobler.

Conversely, it is for the good of the public that the teachers of pure science, and more particularly those of the humanities, should in turn be broadened by contact with the teachers of the technical school. What I gain from another, be he broad or narrow, broadens me. The scholar who, as Dr. Van Dyke says, passes "from the class to the instructor's chair, and from that to the professorial cathedra, and so along the spiral, bounded ever by the same curve and steadily narrowed inward" may be an extreme case; and so may the mathematical snob who hopes that mathematics may lack usefulness, a man as narrow as he who talks of art for art's sake, as if anything were for itself and not for the uplifting of man. Extreme though these cases are, it is in the direction of scholasticism, or professorialism—

I hardly find the right word—that the teachers of the humanities and pure science as a class twist. This is unfortunate because it turns them the farther from their students, whose natural twist is in the opposite direction. In youth our god is Hercules; we are of hot blood and high spirits; we are openly material; we boast of being “arrivists.” To us the professor is dry, snuffy, not of flesh and blood like ours; his interests are not ours. We are not in touch with him, though unconsciously we need his touch so deeply. Our football-loving and rather brutal race especially must see to it that the refining and softening influence of these teachers on our youths is not weakened; for clean and sterling as our qualities are, even they must have their seamy side.

Now these teachers should have their twist toward scholasticism and away from their students lessened by contact with the technical teachers, especially if, as in the schools of law and medicine, these are in part chosen from the active practitioners. Such contact, with interchange of views, with readjustment of standpoint, occurs not so much at faculty meetings as at those of committees, at conferences over cases in which both sets are interested, and at the lunch-table. The channels through which these influences pour upon us are many, even though we may not without careful thought enumerate them, as I write quickly and surely with my typewriter, though when I look away I cannot tell you where a single key lies. A word of comment, a smile, a glance, a shrug, shows me even my own specialty from a new point of view, corrects my astigmatism.

These technical men are generally of broader and closer experience with men as distinguished from boys, with the mature as distinguished from the adolescent human being. They have striven with men in work in which they have been helped only indirectly by their education, in the great tasks which are before men in a field of human endeavor probably more normal than the scholastic one, that of winning wealth from nature, of first surpassing and then directing their fellows; more normal because man is by nature rather a governing, getting, and having animal than a scholastic one. Even as professors they may remain in close contact with the great technical work of the day as consulting or practicing engineers, as directors of industrial companies, and in other ways.

It is to be remembered that these technical teachers, in spite of their contact with affairs on one side, have on the other side close contact with the problems of education. Indeed from the very fact that they have been called to teaching they probably have a natural interest in it; they long to explain and convince. Thus while the distance between their point of view and that of the teachers of the humanities is enough to give new and precious views of the problems of teaching and training, it is not so great as to prevent these two classes from understanding each other and working in harmony, as experience abundantly proves.

Indeed, no argument is needed to show that every added class of teachers should add to the broadening effect of the environment, and should thus make the attitude of each more just. Each class may indeed attack its problems in its own way; but the solution which one finds should aid the others. The president brings to each faculty some of the

experience of each of the others; the university council facilitates the comparison of different solutions of like problems. The professor of mathematics or of Greek may be the one to whom I appeal for light on my problems of molding embryo metallurgists.

Here a word as to the interaction of different classes of students. The serious technical student unexpectedly learns from his fellow of the college of the delights of this or that writer; of the existence of this or that school of philosophy; his interest in things beautiful is awakened; a chat with the student of architecture sets him thinking about the genesis and meaning of logical, finished Doric and soaring, spiritual Gothic. Each student from another department cries "Audi alteram partem; however good and healthy your interest may be, they are only one group out of many." The technical student's horizon is broadened; and truly it needs broadening. According to my observation, narrowness is the chief defect of the isolated technical school.

Like students of the other learned professions the technical students are as a class more earnest, more zealous, than their fellows of the college; they are more mature, and they see more clearly than the college students the bearing of their studies upon their life's work. These contagious qualities, zeal and earnestness, should through intercourse with the technical students be caught in some degree by those of the college students who are not thoroughly immune.

This influence of the technical student should be stronger than that of the other professional ones, because he is nearer than they in age to the college student, and because he meets him much oftener than they in classroom, laboratory, and recreation.

Happily in human intercourse action and reaction need be neither equal nor opposite. The barbarian barbarizes neither colonist nor missionary. The stronger holds to his way sometimes even the more steadfastly when the benefit of his example to others touches his humanity or his pride. And if the less earnest among the technical students suffer through having the example of the more earnest of their number offset by that of the college students, less earnest as a class, is not this the disadvantage which attends every bringing together of men, and may we not hold that the uplifting action of the stronger will in general far outweigh the down-dragging action of the weaker? In the interaction of depraved men with well-meaning boys the opposite might be true; but here we have not to do with the depraved and vicious. The technical student is stronger because more mature, and because stirred by a stronger motive; if the college student lacks earnestness, it is not because the motive away from it is strong, but because the motive toward it is weak. The upward influence, then, of the more mature and more strongly moved technical student should in general outweigh greatly the downward influence of the less mature college student, lacking strong motive. Even here, then, the community as a whole should profit by the interaction of students. The college students gain in every respect, and the technical students should gain in breadth more than they lose through any down-leveling of their earnestness, especially if the technical school, at the time of association, has already the momentum which size

and established traditions give, and if the influence of the college is diluted by that of allied professional schools, such as those of law and medicine.

But the matter may not be so simple under other conditions, as for instance if, in creating a new technical school, the choice should lie between isolation and association not with a university but with some long-established college which has as yet no professional schools, and thus is itself isolated. Since the broadening effect of association is here at its weakest, while the zeal-chilling influence of the college students is at its strongest, this influence is likely to receive preponderating weight in the minds of those interested in the welfare rather of the projected technical school than of the general public. Such men, and it is in their hands that the decision may rest, would probably oppose association, unless the traditions of the college made for earnestness and scholarship rather than fun and football.

In considering association with a true university, however, though this untoward influence is not to be ignored, it should weigh but lightly against the promised advantages, unless the conditions are unusually adverse.

The counsel and learning of the professors of the school of pure science and of certain professors of the college should directly benefit the technical school, associated with the university, by helping to plan and to interpret the researches both of its teachers and of its advanced students. This widens the field of usefulness of the technical school. Its investigators go farther and deeper, and see more clearly. The better-planned research is the better-aimed artillery of science; we throw ourselves on the hinge, not on the solid wall. Wise interpretation of results houses the harvest; false interpretation rots it, making poison where food should be. Remember that it is rather in the great university than in the isolated technical school that eminent professors of mathematics, chemistry, and physics ought to be found, both because the university is their more natural home, and because in it, thanks to the grander scale, their energies, priceless to the community, can be used to better advantage; that is to say, on the most difficult and important work, whether of counsel, direction, or research, instead of being relatively wasted on routine or administrative work which less precious men can do.

As with men, so with instruments. Many of the more costly of these are needed imperatively but intermittently. The technical school readily lends hers to the associated school of pure science, and *vice versa*. So too with books.

And here we reach the general question of economy. Nobody will deny that increase of scale permits greater economy in administration; even if the locomotive were no faster than the stagecoach its economy would insure its use. Nor are we to fear that our present universities have reached the limit of economical human administration; the history of our great industrial and railroad combinations instructs us here. We need not ask whether their vast scale has increased their benevolence or beneficence; for our immediate purpose their lesson is that the present university scale does not approach the limit of the economical and efficient.

Let the extreme cases make the principle clear. Consider at one end the great university with its five thousand students; at the other an imaginary school in which one student is trained as a mining engineer. The cost to the community of providing for this solitary youth, the great staff of teachers of chemistry, physics, mathematics, mining, metallurgy, mineralogy, geology, civil, electrical, and mechanical engineering, and the library, laboratories, and apparatus, would be prohibitory. It is not so much that money would be wasted, but that the energies of these teachers would be wasted. Add twenty-five students of mining engineering to this first, and a great economy results; add two hundred students of various branches of engineering, and still greater economy results; add a school of pure science and then a college, and at each step you have economy. At which stage should economy cease?

Each of these steps widens the field of each of the fundamental and very important divisions of study common to these several parts of a university. A commander-in-chief to plan grand strategy, a commissary-general to plan for food, a surgeon-general to plan for health, division-generals to interpret and apply, colonels to prepare details, captains to lead the charge, privates to give and take the shock. The ideal great university fully occupies each general and colonel with work on his own plane, so that his strength is not frittered away on work fit for captains and subalterns. On the staff of the university are men differing widely not only in special acquirement, but in capacity and judgment. The grand scale permits an approach to that ideal planning and division in which the energy of each worker is fully used in work for which he is fitted, and in work fit for him. It enables us to give the investigator more fully to his investigations: to confine the popularizer of knowledge more fully to the immature students, and the deep thinker more fully to the advanced students. What here appeals to us chiefly is, not saving salaries, but better fitting work to worker, enabling each to give the world the most of his best and most of all fully supplying the generals with generals' work, thus increasing the efficiency of the labor of some of the community's finest and best, and spreading wider the invaluable leavening of that little leaven.

You may ask, "Are not the undivided services of an eminent president more valuable to the isolated technical school than a fraction of the services of even the most illustrious university president?" Each such case must be judged on its merits. The simultaneous consumption and conservation of my cake is no part of my creed. If you dispense with your president and save his salary you cannot keep the equivalent of his full services. But why need you dispense with him? The president of a technical school should retain his efficiency, should indeed accomplish more, if, remaining at the head of his school, he leads it into association with some sister institution. The act of association need neither expel, enfeeble, nor obstruct him.

To sum up, wisely guided association, while it need neither deprive the technical school of character and individuality, nor injure any of those in interest, should benefit the community, whose welfare here deserves our chief thought, through the broadening

interaction of the teachers of pure science and of the college, representing scholarship and culture, on one hand, and the technical teachers, with their closer contact with active life, on the other hand; through the interaction of the more earnest technical students and the more broadly studying college students; in a word through the broader environment which the university offers, with diversity of life and interests, of teachers and students, of museums and galleries. For the adolescent this environment is to that of the isolated technical school as city life is to village life. Further, the teachers of the school of pure science and of the college should help materially the technical school in its investigations. Again, the grand scale should effect great economy, not so much in saving salaries and in widening the use of the more expensive instruments, as in fitting work to worker, and best of all in more fully supplying the eminent with work on their own plane.

Against these great advantages the zeal-chilling influence of the college student upon his technical fellow should count for little under all usual conditions.

DISCUSSION OF THE ORGANIZATION OF HIGHER TECHNICAL EDUCATION

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HADLEY: I agree very heartily with the general views of the paper. Yet I could not help thinking as I listened that a technical schoolman would say that it did not present quite fairly the real objections that most of them feel. In practical cases like the question whether the Institute of Technology shall consolidate with Harvard University, or whether a new technical school shall be placed in connection with any university whatever, the real feeling of objection on the part of those who oppose it is due to the fear that the people in the university will regard the technical school, as they have done in the past, as an inferior form of organization, and will put before that school the alternatives either of diversion from the original purpose of the work, which was to educate people to make a living in a particular line of life, or of continuation in its old work, but under a sort of badge of inferiority.

Now, the alternative of either abandoning its purpose or accepting a position of inferiority will stand as an obstacle in the way of many givers who would like to found new technical schools, but wish them to be recognized as high-class institutions, and as coördinate parts of any institutions with which they are connected. Can we avoid this difficulty? Can we meet the wishes of those people? On an answer to that question will depend the answers to the question of whether we can have our technical schools organized in connection with our universities.

The aim of the technical school is to prepare people for the successful exercise of various professions and callings in life. What is the aim of the university? Most people would say, to promote knowledge. I believe that definition is at once too broad and too narrow. There are a great many other institutions which attempt to promote knowledge. The distinctive aim of a university is to establish and maintain standards. I do not give that as an original definition, but as a description of what makes the university distinctive from other institutions that are trying to promote knowledge. You cannot get this ethical element out of the university idea; the university is primarily and mainly occupied with the purposes with which learning is pursued.

Now, there are some cases where the association of a technical school—using that in the broad sense—with the university has resulted in the very highest development of both. The association of instruction in the Johns Hopkins Hospital and in the Medical School here with the University has made that medical school a place where without in the least detracting, but rather enhancing, the efficiency of the institution in making good physicians, there has been established and maintained a set of ethical standards in connection with the profession which it would have been very difficult to maintain had not we found this association of the two.

Now, can we do with all technical schools what has been done by Johns Hopkins for medicine? I believe we can; but it will be necessary for the university authorities to avoid certain mistakes which most of us are in danger of making when we come to deal with technical schools. We must, in the first place, avoid the mistake of thinking that the pursuit of knowledge is necessarily higher than the pursuit of public service. The question whether a student for the degree of doctor of philosophy is engaged in higher or lower work than a student of arithmetic depends very largely upon the man, the spirit, the purpose. If he is engaged in collecting with a muck rake a number of pieces of muck that nobody else has collected before, his work is not higher, but lower. If he is doing it because he can publish his name as the first man that made a collection of that kind the university that stamps his work as high, and the work of the student, in a school of commerce, as low, will be making a mistake. That stands absolutely in the way of coöperation. And, in the second place, we must be prepared to give to the purposes of the founders of technical schools a degree of independent recognition which is not always easy. We must avoid the constant temptation to make them research laboratories, to make them places where new knowledge will be discovered, rather than places where students will learn to make a living.

If we can do these two things, we can make them part of the university; and they will be unconsciously, but overwhelmingly, affected by the higher standards of the university as a seat of learning. This will work against pure commercialism and against narrow specialization, against the influence which turns out machines, and not men. We must make room for this real objection to consolidation as it has been sometimes managed, and give the technical schools the good which I am convinced they really need, without burdening them with what I am convinced is a real danger and is liable to become a real evil.

MR. HOWE: It seems to me the matter of the keeping up of standards depends on men rather than on classes of institutions. I do not think that you will readily find an institution where the desire to keep up standards has been stronger or has had more influence than in the Institute of Technology. You will find there a group of teachers, and students, too, conscientious men with high ideals who have striven always to keep up standards even at the danger of driving the institution into bankruptcy, as this policy at times promised to do. The feeling was, O Neptune, you may sink me or you may save me, but I will keep my rudder true.

As to having technical schools places where new knowledge is to be found out, so far as my own part is concerned, I find that is very important. The young metallurgist is really hired in the works, i. e., in his professional practice, as an investigator, and he is almost at once set at discovering something new. At the very first this is really in order that he may show his own ability while busied with a harmless task, though nominally it is in order that he may discover some improvement on existing practice or the cause of some present trouble, or that he may gather and analyze statistics

as to some matter on which light is needed. And soon this nominal purpose becomes the real purpose of his work, if he is really fit for it. In order to prepare him for this his graduating thesis is based on an original investigation, not necessarily a difficult one; but so far as it goes this thesis work must be original. He must state briefly and clearly our knowledge of the subject in hand, and must then add something to that knowledge, as he would write a report to his superintendent. This seems to me among the most valuable things that we teach him. In metallurgy, at least, that is the situation: the industry asks us for investigators.

MR. VAN HISE: The state institutions in the West are following two different policies, in this respect: some states concentrate all of the funds which go for higher education in one institution; others devote their funds between two or more different institutions. Among the men connected, no matter in what department, with institutions where the funds are consolidated, there is no doubt whatever that this consolidation is advisable. The work in the languages and the sciences in such an institution, for the technical students is done in the departments of the languages, in the pure sciences. The technical school is able to concentrate its entire fund upon its special work. For instance, a college of agriculture, connected with a university, is not obliged to maintain departments of pure chemistry, physics, or botany. All this work is done in the college of liberal arts in those departments; as an example, all the students who want chemical work come together in one building. The department of agriculture maintains only the application of pure chemistry to the problems of agriculture. The students in the schools of applied knowledge gain in the university a knowledge of letters and science, of pure science—all their fundamental work; and because of this union they gain a much deeper and more thorough training in the fundamental work upon which their applied sciences should be built, than is possible in the school of applied science alone. In every state university in the West in which these institutions are united it is taken for granted that their union is of great advantage, not only as producing better-educated technical men, but as conserving their own special funds.

Upon the other hand, the college of liberal arts and the graduate instruction also gain from the association, in the ease in which they get funds for their advanced work. The discoveries of the college of agriculture, the discoveries of the school of engineering, having a practical value, are powerful levers which lead to the addition to the university of funds which are distributed throughout the departments. In those states in which the funds are divided there is universal expression of regret both by the technical men and the men connected with the so-called universities, that the funds are divided.

MR. STRINGHAM: We are at present discussing the question of higher technical instruction in California, and we find the status of the technical schools in the universities far from satisfactory. Although the undergraduate course in engineering is of the same length, and of perhaps greater difficulty than that of the college of liberal arts, I doubt whether the education which the young man obtains in such a course is of as high a type in the making of the man as the older education of our colleges. And yet a great many graduates of our technical schools prove to be capable of undertaking field and engineering work of a high order.

The time is at hand when many technical problems must be attacked, not by the old rule of thumb, but by scientific method, and by men who are trained in that method. We already under-

take a certain amount of research work for practical industrial purposes, and we shall shortly actually organize graduate courses in engineering. It is not possible to crowd into the undergraduate course enough of the higher instruction that prepares men for the modern problems of engineering, and our graduates are themselves asking for a larger equipment than that which the University has furnished in the past. We give only the Bachelor's degree for a four years' course, and we have never yet given the degree of engineer at the University of California, though in the near future we expect to offer higher courses of study that shall lead to that degree.

MR. VAN HISE: The same question has come up with us, and we already have attempted one solution and are now attempting another. For a long time we thought we might induce engineers to devote at least two years to the college of liberal arts before going into engineering, and thus to secure a six years' course. That attempt failed. We have now attacked the problem from another point of view. We have planned, and will introduce this coming year, five- and six-year courses in engineering, which distribute the liberal studies through a longer time. In the six-year course providing for advanced engineering studies we will give this professional degree of engineer, for the four or five years' work only the Bachelor's degree. We believe we are going to succeed in getting the better class of men to come into a longer course of engineering.

The students who take our sixth year will be put with students in the graduate school, and we shall regard the degree of electrical engineer, mechanical engineer, or civil engineer as an advanced degree equivalent to the Master's degree in science or arts.

In the announcements of these courses, which will soon be published, will be found a combination in one case of studies in commerce with studies in engineering; there is a demand among the higher-trained engineers, the men who are with leading railroads and leading lines of industry—for men not only with a technical training along their particular line but also a training which leads to business success as well as technical success. We do not regard this as the ideal combination, but it is better than the simple engineering training. And if we can get our students to combine studies in this way, it will not be long before they take advantage of the broader privilege of electing studies anywhere they may desire in the college of liberal arts, and so making themselves broadly educated men as well as engineers.

MR. PENNIMAN: The experience of Pennsylvania has been very interesting along this line, although the result has led in a different direction. Since about 1850 there have been scientific courses, and gradually these have been lengthened from two to four years. Now the scientific course has been still further lengthened, and the plan has been somewhat changed. At the end of two years the student chose between a number of subjects; at the end of four years he got his Bachelor's degree, and at the end of five years his degree in chemistry, or in engineering. We found, however, in response to the great public demand for the regular technical course of four years, as established at Troy and Stevens and other technical schools, that it was wise for us to inaugurate a four years' course leading directly to the degree of Bachelor of Mechanical Engineering, or Civil Engineering, and our old five-year course lost students, until it became eliminated by the process of time. Since then we have tried to arrange combinations between courses in arts and the technical courses; but though we have tried our best, we have found it extremely hard to get men to take the six-year combined course. A number of men, after completing their arts

courses, go into engineering work, and, on the other hand, a number who complete the engineering courses then liberalize their work by taking some of the arts work in addition. But we have had few students in any five-year course, as such, since the organization of the four-year course. The tendency is to crowd a technical course with subjects deemed essential to turning out a chemist or an engineer or an architect, and to slight the so-called liberal subjects. At the same time, we are making the effort to retain as large an element of liberal culture in these courses as possible. I suppose about one-quarter of the engineering courses would be accepted in an arts course for a degree as work in pure science or literature.

The tendency in a great many technical schools is to have mathematics and chemistry taught from the engineering point of view; to select a man, if possible, who has had an engineering training to teach the engineers mathematics and chemistry—to make technical, as far as possible, subjects which we ordinarily regard as pure science.

The university should stand for standards as well as for the pursuit of knowledge, it should turn out not simply engineers, but men who are broadly trained and "see life steadily, and see it whole." "It is well to build your castles in the air; that is where they ought to be; now, put your foundations under them!" said Thoreau. In an isolated *technical* school it is exceedingly difficult to do that, because the whole atmosphere is influenced by a body of trained men along a certain line.

We have found that the great problem is to keep the technical courses liberal, and we have tried our best to do it. But we have found, as I have said, that the old five-year course does not work.

MR. STRINGHAM: We do ill in bestowing university honors for an inferior grade of work. Some of the work now done in the technical schools belongs in the high school. The manual training and much of the so-called shop work belong there and our hope in California is that it may all go there ultimately.

Our first attempt to extend the time of preparation for the technical occupations is being made in our recently organized school of architecture. In this school a six years' residence is insisted on and the course includes the essential element of liberal culture. The student may get his Bachelor's degree in the usual time, but to the preparation for the profession of architecture he must devote six years and there is no alternative. I hope this is only a first step and that some day we shall be able to insist on similar conditions in the other technical schools.

MR. HALL: I was very much impressed by an article in one of the late numbers of a journal devoted to higher education, where the point was brought out that the time has passed when it is necessary for anybody who is studying at a technical school to know the whole of any of these great sciences. For instance, in chemistry or in physics, a man must select certain chapters and certain topics, and is lost if he tries to make himself an all-around chemist or physicist. This article went on to give for the various lines of technical higher education, those parts of these sciences which it is necessary for a man to know.

We are going to have the same question with regard to the integrity of the great sciences of chemistry and physics, the same discussions as to their teaching as integral things, that we are now having as to the relation of the humanities to technical studies. There is a great deal of very significant truth in what Professor Howe brought out in regard to educating young men, and reference to some practical application of what they are learning, and also to educating them under the influ-

ence of men who have come in contact with men, as the technical teachers have, far more than the academic teachers.

I wonder if there is not a little truth in the old definition that to place a young man in the academic environment was to retard his development, to keep him lingering in the charming paradise of youth, in association with people youthful in all their habits, and isolated from all attempts to bring his knowledge to bear.

The statement of an eminent professor that a man can now get through an A.B. course, if he chooses his subjects wisely, with one hour a day of work, may be connected a little with the charm that graduates find in the old institutions that Mr. Howe spoke of. I think the meaning of the word "school" (leisure) had some significance. The old idea was not to work very hard. It may have its place among the humanities, to keep that idea in our civilization and in our country where everything presses to maturity before its time. About the time this University was started the idea was, you must have pure research to discover scientific truths; and then, afterward, application of those truths. The idea then was that the desire to apply was not a stimulus for all research. Now, in a great many ways we are just reversing that. The time may come eventually when we will have applied education first and reserve research in pure science for those who have felt the stimulus there is in studying application of science, have been by natural process of selection fitted for it, and have demonstrated their fitness to really add to the sum of human knowledge.

MR. HOWE: At Columbia a good deal of thought is being given to this question of raising the standard of the graduating degree in technical subjects. The great difficulty has been that if there are two grades of degree apparently all will take the lower grade. They want a degree, they want to graduate, and they take the path of least resistance, the lower degree. That has been the dread we have had. What we have done is to prepare a set of courses in the academic department, including a large proportion of scientific matter and covering the first two years of the technical course, so that after graduating as Bachelor from one of those courses, the student is then in a position to take a technical degree in two years; making it a six years' course. While this course has not been rushed into, six to eight men a year take it, in many cases deciding after they have entered college that they will arrange their course so as to be able to take an engineering degree after six years.

We hope eventually to have the technical schools altogether graduate schools, like similar schools of law and medicine. At present such a change would probably divert the vast majority of students to other institutions. But our hope is that ultimately the number of students available would justify us in saying that these technical schools are graduate schools only; that you will get the engineering degree in four years here, but you must have a Bachelor's degree before you come. Now, the community wants another class of men also; men who have got four years' training in a certain thing; and there is a certain class of men who will say, "I am not able to give six years to this." Our answer is "Very well, there are institutions for you; our institution is for the elect, those who can spend the years here that we prescribe." That is what we hope to reach some day, but we fear that that day is not very near.

MR. VAN HISE: It seems to me that it will be necessary, either to prescribe the work leading to the A.B. or to require four years of technical work, just as the medical school does. The student's main work in the A.B. course may have been literature or history.

MR. CRANE: The general plan which President Van Hise has laid down was established at Cornell several years ago—to combine the courses in civil engineering and mechanical engineering in six years. But so far as the number of students goes, I cannot say that it has been successful. As to the encouragement of higher study, that has been to a certain extent provided for by the encouragement of graduate study in engineering. A considerable number remain to take the Master's degree, and some remain for the higher Doctor's degree.

At Cornell certainly the influence of the college, the school of humanities, or our technical schools has been most salutary and profound. Through it the standard in all the technical schools, both for entrance and graduation, has been gradually raised. On the other hand, the influence of the technical schools has been most beneficial. It has been delightful to me during many years to mingle with a body of students in the different colleges, who in spite of their very different pursuits, have been so remarkably homogeneous. Even when the academic course was the largest course in the university, there has never been the least feeling of inferiority on the part of the technical students. It is no longer the largest, the school of engineering now having over a thousand students.

As to the economic side, it certainly seems unwise to devote the enormous sums of money necessary to a separate technical school when, as is the case both in state universities and elsewhere, the college can furnish the technical school with a very large part of its study and its material in mathematics, languages, and pure science.

MR. LEUSCHNER: At the New York meeting several speakers drew a distinction between those professional schools which place a man in a position to earn his bread and butter and the so-called university professional schools. President Hadley has expressed exactly what was insisted upon at the time—that the university stands for the preservation of standards; and while there may be a place for, say, medical colleges, it was considered the duty of American universities to develop the medical university school as distinguished from the medical college. In reference to engineering schools and university schools of engineering, it is much the same. Besides preparing a man to earn his bread and butter in the shortest time possible, and giving him a certain amount of liberal education, there is this third problem; to put something on top of that bread-and-butter education, to educate, in the graduate school, engineers who are in a position to promote their particular subject.

In California it is our hope that the degrees of Civil Engineer, Electrical Engineer, etc., may ultimately be on the same footing as the degree of Doctor of Philosophy, and include the necessary liberal culture, the necessary professional training, and the necessary power to promote the particular subject. A student may get the Master's degree in our Engineering courses in one year after taking the degree of Bachelor of Science, but the degree of Civil Engineer he cannot get before three years.

MR. CARVER: In the discussion thus far it seems to be assumed that so-called college studies are more liberalizing than technical studies. I think that the question, "What constitutes liberal culture?" needs some looking over. Possibly a six years' engineering course might be considerably better from the engineering point of view, might make better engineers, than a two years' engineering course on top of a college course. On the other hand, a man trained in an engineering course, with a fairly broad curriculum, may be just as liberally trained as though he had spent four years of that course in what we ordinarily call "the college." Perhaps there is something of itself unprac-

ticable and narrow in the objection to the attitude of mind which would thank the Lord that here is a subject which has no use whatever. If a man can get as much satisfaction out of the contemplation of the infinite as he can out of the consumption of highballs and caviar it is as profitable for him to spend his time in the contemplation of the former as in the contemplation of the means of getting the wherewithall for the latter. "What constitutes practical education?" is still, it seems to me, the question.

MR. WEST: At Princeton we have had a four-year undergraduate course and a six years' course leading to the E.E. Four years of the latter were given toward the Bachelor's degree; this included a certain amount of scientific study fundamental to engineering. Then came two years devoted to the theory of electrical engineering. We have had the larger number of students in the four years' course. The result has been inferior by the testimony of the men themselves. We have had very few students in the six years' course; but each is a picked man. Almost without exception, by the testimony of the director of the schools, those men in the electrical engineering schools have distinguished themselves. The poles between which we vibrate seem to be more students with inferior results or few students with superior results. It is natural to suppose that what is meant is the elevation of technical schools associated with universities to the level of the great professional schools based on liberal standards. Whether that should be by prescribing two years of college studies or four, is a question to decide. From our experience at Princeton we have learned that the two ideas cannot any more than can a professional and a college education be driven side by side; we must in some way put them tandem.

MR. McLAUGHLIN: Perhaps I ought to say a word in regard to past conditions and the apparent present tendency in the University of Michigan. In the first place, the tendency has been not in the direction of coördination and combination within the University, but in greater separation of the technical school from the arts courses. Comparatively recently single departments of English and German have been established in the technical schools, on the ground that the engineer students need to have those subjects taught from the engineer's point of view. In the next place, the engineers have asserted that it is impossible to turn out a practical engineer in four years; at the present time the course is four years and a fraction—at least one summer's work is demanded in addition to the four years. I think the result inevitably will be the establishment of a five years' course for the Bachelor's degree in engineering.

Some of us connected with the arts department have felt that there ought to be such a combination that one year or two years of arts work will be demanded for the work in the technical school. But at the present time the tendency does not seem to be in that direction, because engineers say, "We do not want four years of technical work added to one or two years of arts; we want and need more than four years of technical work to prepare a practical engineer for his regular occupation." The present tendency appears to me to be to make the technical course distinct, and not combine to or add to the undergraduate or regular arts course—at least not for the present. Certainly there is no immediate prospect of the technical course's becoming a graduate course in any proper sense.

THE THIRD SESSION

COINSTRUCTION IN GRADUATE SCHOOLS

PAPER PRESENTED BY ALBION W. SMALL, OF THE UNIVERSITY OF CHICAGO

At least one fact is beyond reasonable doubt. There probably are subjects about which it is possible to change men's opinions by argument. Coeducation is certainly not in the list. If opinion has been formed with reference to this subject, either *pro* or *con*, no amount of reasoning has ever been known to change it. New experience alone has altered prejudice.

It would be a waste of time to consume any portion of our session reviewing the *a priori* arguments with which we are all familiar. My duty seemed to be to ascertain the experience of the members of this Association, so far as graduate coinstruction has been undertaken, and to collate the evidence as to its actual working. To do this I have applied to each of the members of the Association for official information, and also, in numerous instances, for expression of individual judgment based on actual experience. Answers have been received from each member of the Association with the unfortunate exception of Harvard. These answers contain nothing which tends to justify conclusions very different from impressions probably current in all minds that have given any attention to the subject. The evidence merely affords somewhat more concrete justification for casual opinion.

So far as the question of coinstruction in Graduate Schools depends in any way upon knowledge of the aggregate number of graduate students in the country, we must be content to eliminate that factor from consideration. Graduate study is such an uncertain quantity that it is impossible to reduce statistics on the subject to an acceptable common denominator. It is probably, however, a justifiable assumption that the experience of the members of this Association furnishes all the evidence as to the qualitative effects of graduate coinstruction that would be available if the total number of graduate students in the country were accurately ascertained. I have confined my inquiries therefore to the members of the Association, and even these have not given me the means of stating precisely the total number of graduate women. The number reported by members of this Association for 1903-4 was 835. To this number the graduate women in Harvard and Michigan must be added. The graduate men in those institutions numbered in the same year, 2,201. To this total we must add the graduate men not only in Harvard and Michigan, but also in the Catholic University, Clark, Princeton, and Virginia. The graduate women in the universities of the Association are thus found to be a fraction smaller than one-fourth of the total number of graduates in graduate and professional schools of the Association.

At present I am unable to discover any important reason for considering in this connection the arithmetical totals of graduate students divided by sex. The percentages alone have at present any pertinence.

The principal facts are as follows: Four members of the Association, namely, the Catholic University, the University of Virginia, Johns Hopkins University, and Princeton University admit no women to graduate courses. Johns Hopkins Medical School is regarded in this statement as a distinct institution. The other members of the Association admit women as follows: No different terms are prescribed for men and women at Clark, Cornell, Pennsylvania, Wisconsin, Chicago, Stanford, and California. At Yale the terms are identical except that the degree of Ph.D. only is conferred upon women. At Columbia women are admitted on equal terms to Political Science, Philosophy, and pure Science, with certain restrictions in the case of pre-medical courses, but women are not admitted to courses in Law, Medicine, or Technology. Certain individuals also decline to receive women to their courses in the departments otherwise open.

The attendance of women in the Graduate Schools is reported by the different universities for periods which vary from five to thirteen years. In the following schedule the average percentage of women is given for the number of years reported in each case. The percentage of women students in graduate courses has been: At Clark, .00; at Yale, .114; at Johns Hopkins Medical, .14; at Pennsylvania, .189; at Cornell, .19; at Columbia, .208; at Wisconsin, .23; at Chicago, .24; at Stanford, .34; at California, .446. The figures furnished by Michigan did not show the ratio.

It would of course be possible to propose many questions, both in analysis of these figures and in demand for further information. For instance, the most obvious inquiry is with reference to distribution of women among schools and departments of the universities of which they are members. It has not been feasible to obtain satisfactory information on this subject, first because some of the universities have not sufficiently classified registrations, second because the classifications of different universities do not correspond. Nothing appears in the statistics reported to impeach the current theory of distribution, namely, that the proportion of graduate women is lowest in Technology, increasing in the order, Law, Medicine, Physical Science, until it is highest in Arts and Literature. The University of California alone reports a constant excess of women over men in graduate courses in the latter group. In the year 1899-1900 the women were 53 per cent. of the total graduates in the Liberal Arts courses. The proportion has increased each year since. In 1903-4 it was 56.6 per cent.

The figures tend also to confirm the general impression that the number of graduate women increases in direct ratio with the availability of the instruction for immediate application in secondary teaching.

It would be interesting also to know how the proportions of men and women vary in the different years of graduate work. This does not appear from the statistics. The percentage of women who take the Doctor's degree, however, is apparently much lower than the total percentage of graduate women.

Whether it would be profitable or not to pursue such inquiries, the material for exact conclusions is not now available. The only task remaining has been to search for evidence

touching the question whether experience justifies the assumption that, in practice, graduate coconstruction presents in any sense a "problem," from the administrative or educational or scientific point of view.

We must discriminate at once between problems of the individual and those of the university. It may be altogether unwise for women to enter courses in Technology, for example, and each university might feel bound to discourage election of such courses by women. Even if some women should persist in exercising their legal right to take such courses, in a state university, for instance, no university problem in the strict sense might necessarily result. The individuals would simply have taken their own risks of preparing themselves for careers in which their services would not be in demand.

Not having power to compel the attendance of witnesses and to administer oaths, the writer may not have been able to elicit all the evidence which more searching inquiry might have brought to light. So far as he has been able to go he has encountered a few confessions of unshaken prejudice against graduate coconstruction, and one or two vague hints that more might be said against the plan if it were wise to disclose local conditions; but beyond this not a clew has been discovered that pointed to any single case of difficulty in the operation of the plan sufficient to dignify the situation by applying the term "Problem." Whether the particular circumstances of a given university would make adoption or extension of graduate coconstruction wise, is, of course, a question outside the scope of this paper. The present point is that no university, and no professor, has been found willing to express a judgment that the plan in practice has presented problems beyond trifling matters of detail.

The evidence justifies a suspicion that in certain cases difficulties have existed in the form of an unreconciled attitude on the part of individual professors. These men appear not to have been willing to adopt the program of candid experimenters, but to have been as intolerant as possible. This simply means that, so far, the conditions for a fair trial of the plan were lacking, and no consequent friction or failure is fairly to be charged to the plan when applied in good faith.

The president of one of the universities in the Association writes:

I do not see any problem possible in the subject assigned to you. . . . It is much like the inquiry, What different methods should you pursue in teaching the multiplication table to girls and to boys?

Another expresses himself in the following terms:

There are no problems connected with the graduate coconstruction of women and men. The only problems I know of in coeducation refer to the satisfying of the more or less unreasonable demands of men and women educated monastically in the East, who do not believe that western institutions are quite the thing anyway. There are some minor problems, as where a great multitude of women are scattered over a large city, or when they are huddled in garrets in an unsympathetic village. These are not problems of education, but belong to the boarding-house side of the university.

To be sure, the higher critic would be well within the limits of cautious prudence if he ventured the hypothesis that the source of these statements was on the sunset side of the Alleghenies. He would consequently rate the judgments simply as favorable prejudice unshaken by experience. The authors of the statements would doubtless permit the criticism to go without challenge, simply testifying that even if their prejudice in favor of the plan is in itself no weightier evidence than prejudice against it, their long experience with the workings of the system has encountered no good reason for revising antecedent opinion.

In one instance a young instructor in one of the Physical Sciences spoke impetuously as follows: "Women are a nuisance in the laboratory. They are absolutely helpless. They can't even scratch a match for themselves. It is a bother to have them to look after." When these remarks were repeated to the head of the department, he smiled rather mysteriously, but on being pressed for a definite comment, said,

I am afraid there is some truth in these opinions. My experience has been that very few women have the mechanical skill required for successful laboratory manipulation. At the same time this is a matter that in most cases corrects itself. I wish that women would not take graduate courses in my department, but I have never seen sufficient reason for denying them liberty to find out by experience whether they are able to accomplish good work in it.

An officer of another university writes as follows:

I should hardly say that the question of coinstruction in Graduate Schools has become a real problem here, or rather that it has continued to be such. . . . Some of my best students have been women; and again, I have had more annoyance from certain women than from any of the men. It is less often possible for the women to settle down exclusively to the work of the higher degrees than it is for men, and this is apt to make their work less even and constant. I think also that the proportion of "degree hunters" is apt to be somewhat larger among the women; but I have never made any careful calculation—as perhaps none could be successfully made—on this point. Whether men are less willing to go to institutions where they are thrown with women students is a question I have often heard raised. My experience here hardly affords data for a decision of this question; it certainly does not tend to support it.

Newspaper reports of alleged sweeping condemnation of coeducation by one of the most prominent members of a western university faculty led to a request for his testimony on the subject of the present paper. His reply contains the following:

Like yourself I do not feel that there is any "question" in the case; . . . as for *graduate* coinstruction, I can testify that in my somewhat long experience of it there has been absolutely nothing against it. Rather, almost, everything in its favor. Some of my very best higher work has been done by women again and again. Their work in Kant, Hegel, the toughest problems of Epistemology, and in advanced Ethics—all involving research at first hand, reduction and criticism of "sources"—has been of a high order; and though the men have hitherto always carried off the *very* highest honors, yet the best women have come in at a *good* second; and in a few cases have made it almost impossible to tell who was the *very* best. Some years the women have done all the best work of those years, probably not up to the grade of my most distinguished men. But

then of those latter it must be remembered that they were exceptional, with the stuff in them out of which have been made authoritative professors in several leading universities.

An officer of another university writes:

The only question that comes up in connection with the presence of women graduate students which occurs to me at the moment, is in the case of colleges which are legally non-coeducational. If the question of adopting mixed courses comes up, and their adoption is decided upon, a modification is rendered necessary of the rule excluding women students from undergraduate courses. In this way such an institution becomes in its more advanced undergraduate work practically coeducational.

It is commonly understood that if difficulties in graduate coinstruction occur anywhere it must be in the medical courses. As there are few strictly graduate medical schools in the country which admit women, the amount of evidence from this source is extremely limited. I am able, however, to present a statement from an officer of the medical department of Johns Hopkins. He says:

Women are matriculated with no other conditions than those prescribed for men, except in the male genito-urinary work. . . .

The statement continues:

So far as I know, it has not been a problem to us. Coeducation has occasioned no difficulties, none at least that have come to the surface. Our freedom from dissatisfaction on the part of either the students or the teachers may, however, be due to the fact that the proportion of women students has always been low. So far as I can learn, it is a general feeling among the teachers and the male students that it would be better for the women to study medicine in a school of their own, but I believe that this feeling is based upon suppositions of difficulties that might arise. As a matter of fact none have arisen so far, and possibly our entire freedom from the necessity of discipline in the matter of classroom behavior, and some of the foolish practices of college students, may be due in part to the influence of the woman element.

Instead of preparing a statement directly in response to my request, an officer of the Rush Medical Faculty sent a copy of a reply which he had recently sent to a committee of women representing an association of medical students in Scotland. They had asked him for information about the status of coinstruction in Rush Medical College. From the reply I abstract the following:

Two years ago Rush Medical College proper, at which place the clinical teaching is done, and which institution has been open to male students only, from its foundation over sixty years ago, opened its doors to women, and since that time a considerable number have been in attendance both at the University and at Rush Medical. The plan seems to work very satisfactorily, and it was a matter of surprise to some members of the faculty that the change at Rush Medical two years ago was accomplished with so little friction; indeed there was no evidence of friction nor even of any special interest whatever. The presence of women was accepted by the men students without any comment, in just the same way that the introduction of an equal number of male students might

have been received. So far no division has been made in any of the classes, and the men and women students take all of the work together, even in the practical laboratories of Anatomy, etc. It is my impression, however, that one or two courses in the clinical line are not taken by the women students, and probably would not be selected. As the course for the last two years is wholly elective, this is very easily managed.

As you invite an expression of opinion, perhaps I may venture to state my own views in reference to the matter of women in medicine, and their coconstruction with men.

First, as to the fitness of women for the study and practice of medicine. While I am one of those who believe that there are certain fundamental differences in the mental, as well as the physical, makeup of the two sexes, I believe that in the study of medicine the directions in which women as a rule excel about offset their deficiencies in certain other respects. For a few years I chanced to be Professor of Pediatrics in a college exclusively for women, and at the same time was the occupant of a chair in Rush Medical College, then exclusively for men. [The writer now illustrates from his observations in the two colleges.] To my mind the most discouraging thing to medical teachers in reference to women is the fact that only a small number of the sex can ever take up the study of medicine, and these are by no means those individuals of the sex who are best fitted for medical study and for success in medical practice. . . . For at least thirty years women have had a fair chance in the profession of medicine in America; . . . notwithstanding these facts one may count on the fingers of one hand the women who have attained to even third rank, although several thousand women have graduated during that period. I think one could safely say that not one woman has attained to the first rank, and only one in America to what one might perhaps designate as the second rank, of medical thinkers and practitioners. I believe this state of affairs . . . explains the indifference (I think it is seldom antagonism) of many of our ablest medical teachers toward the women medical students. . . . Notwithstanding all that I have said above it is true that a considerable number of women must look forward to a life of self-support, and naturally some of them look to the professions as a field of activity. None can deny this right, and while I do believe that the practice of medicine, in the accepted sense, presents certain special difficulties for women, and I think these difficulties should be made clear to them before they make their decision, this decision should rest with them at last, and if they conclude to study medicine, they should have not only the right, but should be given every opportunity and advantage in the way of preparation that is afforded to their brother medical students. I do not believe that it can be ever possible to give such opportunities in a school for women alone and for a number of reasons. . . .

Finally, in a line of activity like medicine, it seems to me that the encouragement of any division of sex is illogical and unnecessary. There are certain topics in medicine that I believe ought to be taught separately. One who holds certain notions about the charm of womanly modesty and reserve, notions which are perhaps a bit old-fashioned at the present time, cannot but regret the inevitable hardening and coarsening effect on these qualities, of the contact with certain things by the two sexes together. There are some women whose womanliness is so fine and strong that nothing of this sort ever deteriorates it, but there are many others who do suffer distinctly. These, however, are matters of detail which are very easily managed in a properly conducted institution. One thing is certain, however; namely, immediately after the woman physician graduates, and enters upon the practice of medicine, she must meet all conditions and all problems under circum-

stances far more aggravating, so far as the presence of men is concerned, than are any conditions she would meet in college. She ought of course to be prepared for this.

Although by far the greater number of our medical schools are neither graduate nor coeducational, the facts seem to justify citation of evidence from some of the more prominent of these schools on grounds hinted at in the letter that I now quote. From the medical college of a state university the following was received:

Our medical department is so new, and the experience consequently so brief, it will, I fear, be of little assistance. So far as we can see, in this type of institution, there is no problem in connection with coinstruction. I am not sure that inclosed figures really fall within the limits of your inquiry, since the medical school here is not a Graduate School, but admits on equal basis with the undergraduate departments of the University. The greater intensity of professional courses, and coincident greater definiteness of purpose on the part of students, will certainly do much to prevent the arising of any problem in this field, for these factors militate against the coming into it of those individuals of both sexes whose lack of balance accentuates the situation.

From the medical school of another state university a report was received which contains the following:

No "problems" of a formidable kind have come up. The hostility of the men students, at times insulting and persistent, has always been dealt with promptly and vigorously, so that of late years the two classes of students have been plodding along side by side, but without the least show of cordiality on either side. The women students compare very well in scholarship with the men, and outrank them altogether in deportment.

From the letter of another state university medical school the following is abstracted:

The numbers are decreasing, as the women cannot stand the pace. There is no problem, and all are treated alike and must meet the same conditions. At the risk of seeming ungallant I must say, that with a few exceptions who approximate the masculine type, women are unfitted to study and practice medicine. Of our women graduates perhaps 20 per cent. are creditable (three or four brilliant), 30 per cent. more mediocre, and the balance worse. Examination is the solution so far as medical schools are concerned.

Without comment on the foregoing testimony we may notice one or two items of a different sort of evidence. Letters from the presidents of all the leading women's colleges contain strong statements of their well-known position, namely, that undergraduate work for women is carried on under most favorable conditions in separate colleges, but that coeducational graduate work is much to be desired. As nothing new appears in the statements written in this immediate connection, this digest will suffice.

It was hoped that the testimony of women who had taken their Doctor's degree in coeducational universities might contain something which their instructors had overlooked. Inquiries were made of graduates of several universities. No more evidence was gained from this source, however, than from the others that university problems are encountered in the actual practice of graduate coinstruction. In the replies there are cautious references to improvements possible in the conditions in the Graduate Schools of certain universities,

but they refer to desired change from partial to complete adoption of coconstruction, rather than to objections that have arisen when construction was unlimited.

Two letters in this group deserve to be quoted. They happen to be from Doctors of Philosophy of the same university who now, however, are in the faculty of two leading women's colleges. The former of these expresses herself as follows:

My own views seem so little worth while that I have undertaken to supplement them by talking with other women at —— who have done university work (here follow certain criticisms of local conditions). The point was also made that graduate women are in general at a disadvantage because their intellectual contact with instructors is by convention practically restricted to the lecture-room, while the men may, and often do, meet their instructors in a more informal fashion, which permits of freer and more healthful discussion of their work. There is something, I think, in this point, although I am not sure how much, and at any rate I do not see how the disadvantage can be easily overcome. That it may be slightly lessened is, I am inclined to think, possible.

All agreed that women are received for graduate work with reasonable courtesy, though never with even the academic type of enthusiasm; and that although the presumption was invariably more or less against them as women, that is, in the way of believing in their accomplishing great feats, they were always given a good fighting chance, and if they demonstrated superior capacity were granted due recognition and honor. All agreed too that while, on occasions involving discriminations between men and women, where the attainments are practically equal, the preference is much more to be accorded to the man than to the woman; but that the tendency is perhaps justified by the greater physical strength and poise of the average man, as well as by the greater likelihood that he would subsequently devote himself to genuinely scholarly work.

This last point indeed suggests the main drift of my letter. I think most women do feel themselves at some disadvantage as women in graduate work; for the conviction that they are admitted, and not sought after, makes it seem a double obligation upon each one to justify her presence by her attainments; and this in itself begets a certain strained and feverish effort which reacts unfavorably upon her work. The fault of all this, however, seems to me to lie so largely in the physical limitations of women, and in their frequent lack of mental discipline, that I am not disposed to lay much blame anywhere else. Those women to whom what I have just said would not apply at all seem to me thus far too exceptional to disturb the generalization. The chief hope for a remedy of the condition lies, I believe, in the stronger physical type which the women's colleges are now doing their best to develop. They will send into university work women better able to cope with men in the plain sphere of physical strength and endurance and this ability will react favorably upon women's work, and so upon the esteem in which it is held as a type. In my judgment, however, the difficulty will never be completely done away with. I have written only of disadvantages of coeducation in graduate work. . . . I could of course have said much of the advantages, because I believe it is the only method at all worth while for women.

The second letter contains perhaps the most central consideration in the whole argument.

The reason that women in general feel strongly on the question of equal privileges in the universities already in existence, is that they feel that the gaining of such privileges is the only chance, for years to come at least, of obtaining any adequate training in graduate work. The

question at stake is not merely: Shall women be given equal privileges in our universities? but, Shall they be given any chance at all to obtain the best instruction in the advanced courses? It is not conceivable that there should be universities of equal equipment for women alone for a very long time if ever. The economic waste of duplicating libraries and laboratories, if nothing else, would be too great. If it is once admitted that women are capable of profiting by the best educational opportunities, and have a social justification in asking for them, then it seems to us that the only practical method of meeting the situation is to give them equal rights in the universities already in operation.

It would be an impertinence to assume that this evidence has not been analyzed and weighed as presented, and its weight appraised more accurately than the writer could estimate it. Nor need anything be said in explanation that the evidence as cited by no means justifies absolute inferences of any sort. A conclusive induction would, of course, have to rest upon a much broader and firmer basis. Still, it may also be pointed out that the evidence fairly represents the situation in the coeducational Graduate Schools. The absence of spectacular incident or of detail that calls for special mention may safely be regarded as significant. Coeducational graduate schools are simply enjoying the proverbial blessedness of the country that has no history.

If it is justifiable to draw working inferences from the very inadequate and fragmentary information available, the following may be suggested: First, as already indicated no shadow of evidence from experience has been detected that women in Graduate Schools are in any way misusing their freedom. Second, no fragment of evidence appears that the presence of women in graduate schools in any undesirable way curtails the freedom of men. Third, the only danger to which the evidence points is one not threatened by women alone. It is the danger of surrendering the graduate purpose of training for investigation to the ambition for numbers. This is a scientifically suicidal impulse. It can be satisfied only by degrading graduate work into mere imparting of tradition knowledge. Most men as well as women tend to depress the standards of graduate work in the way suggested. Circumstances have made it, and doubtless will continue to make it, more exceptional for women than for men to succeed as investigators. If research is insisted upon as the program of Graduate Schools, there is, therefore, hardly more reason for fear that women, with full liberty to elect all courses, will predominate in graduate schools, than that the Japanese will capture St. Petersburg. The statistics lend strong color to the suspicion that the larger the proportion of women in a university or in a department, the less real is the nominal distinction between graduate and undergraduate work; and *per contra*, the more genuine the work of investigation, the smaller the percentage of women who will care to undertake it.

Relatively fewer women than men have the means and the taste and the fitness and the nerve combined to succeed in research. Right or wrong, wise or unwise, the public does not enthusiastically welcome women to professional or investigating positions. Women know that the market for their professional services is limited, and until there is a revolu-

tion in social standards they would be defying fate if they should create a supply much in excess of the demand. If the typical woman had no more courage than the average man, still fewer of them would venture upon graduate study.

When the composition of this paper had nearly reached the present point the suggestion was made that possibly the question which should be raised is that which might be called Coinstruction by Women, rather than the familiar Coinstruction of Women herein discussed. If the suggestion is to be taken seriously in connection with graduate schools, the grounds upon which it must be decided, like those that must determine the award of fellowships, can hardly be in doubt, until the proportion of women who excel in research has changed to an improbable degree.

It would doubtless be unseemly for a worker in a coeducational graduate school to exhort his unconvinced colleagues. I merely hazard one reflection in conclusion. Experience does not confirm the fear that equal franchise of women in Graduate Schools would either unwoman women in general, or compromise the freedom of men. It is, therefore, difficult either to admire the magnanimity or to respect the justice of adding arbitrary disabilities to the necessary obstacles that women must overcome in gaining full freedom of intellectual life.

COINSTRUCTION IN GRADUATE SCHOOLS

PAPER PRESENTED BY PRESIDENT G. STANLEY HALL, OF CLARK UNIVERSITY

The higher education of most women ends with the Bachelor's degree. Most of the few who enter upon graduate work seek general culture chiefly in the humanities, and even in these very few desire the specialization required by the Doctor's degree. Not only is specialization less required in the vocations open to them but their nature is more generic and they take to it less kindly, are more liable to be dwarfed by it, and if it comes it is usually later in life than in the case of young men. Of this very small remainder seeking the Doctor's degree some are very attractive specimens of their sex, good and stimulating companions, and some are otherwise, but nearly all belong to what the late Professor Hyatt called the agamic agenic class with little wifehood or motherhood left in their bodies or souls. They illustrate Herbert Spencer's theory of splendid individuation developed at the expense of genesis for, beyond a certain very variable point, he deemed these two in inverse ratio to each other, so hard is mental and nervous strain upon all the reproductive powers. The question of the graduate instruction of this small but very select class is quite different from that of coinstruction in intermediate and college grades. Many as are the present evils of the latter, and great and radical as is the need of reconstruction, I can see no reason to oppose, but many to favor, the opening of every higher university facility to the insignificant number of élite women who are fit and wish it. My own experience with this class, comprising only one or two individuals a year for fifteen years, although I have supplemented

my impressions by opinions of many others by correspondence, represents only one department and has little more value than an individual vote, and I will be correspondingly brief. Out of the whole number two deserved and would have had our doctorate had we then been authorized to give it to women. For refusing to do so we were severely and widely criticised in the press and were condemned in many women's meetings, but during the last four years that it has been available for women no one has sought it. From these limited observations and consultations I should sum up the present opinion in the general field covered by psychology and education as follows:

1. In the vague and somewhat indeterminate field called pure philosophy, including metaphysics, epistemology, speculative ethics, logic, theories about God, freedom, the soul, and the universe in general, covering the chief matters treated by the line of great romancers with ideas from Plato to Hegel; all these problems hardly exist for woman. She has even taken little interest in evolution, perhaps, as a German writer suggests, because belief in it is presupposed in her very nature. Categories, nominalism, realism, idealism, the nature of matter, good and evil and all that pertains to what Aristotle called the theoretic life, are abstractions that seem somewhat ghastly to woman's concrete mind. The same is true even of the new theoretical aesthetics. Some of these themes, to be sure, have been studied and taught with zest by women who desired to storm all the heights man has attained, and history shows a few very interesting cases of women following these excelsior paths, but always in the footprints of a hero of the other sex. While I can recall a few treatises thought to be oracular and others that show good powers of comprehension and exposition, I cannot remember a book or a thesis by a woman in this field that adds or even attempts to add a single new thought worthy of mention in the history of philosophy. Some have assumed that because women can often do well in the higher mathematics that they ought to be capable here, but these two fields have grown far apart since Plato or even Spinoza. Whatever we may think of the importance of this work for men—and I believe its historical importance very great—there is something, I confess, to me pathetic in seeing a bright woman struggling with these abstractions, and it suggests Plato's theory that absorption in the generalities of philosophy was progressive dying.

2. In some of the more empirical fields of psychology worked by the methods of observation and experiment women have shown great aptitude and have already done much. As soon as life or individuality, even that of plants, is concerned her set is more at home. In the scientific study of the myths, customs, and beliefs of Indians and other primitive peoples, her sympathy, tact, and insight has repeatedly achieved results which men could hardly have attained. She has not only supplemented the work of men but sometimes struck out independent lines and attained new results where men fail. The same can be said to some extent of the study of instincts, habits, and psychic life of insects, birds, or animals, or comparative psychology. Many of these she has domesticated. Those familiar with the recent literature in this field will at once think of the names of a few women of singular ability. The same is true in the study of infancy and childhood where her intuitive insight gives her a

decided advantage and where much of the best work so far done is hers. Indeed, in all fields more well-trained women are greatly needed for the progress of science, and I can see no reason why any university or department should not welcome all those who are competent and show promise to every facility.

3. In experimental psychology we already have a growing body of valuable memoirs by women which are really contributions of more or less value to the sum of knowledge. They have deftness and delicacy of hand in laboratory manipulation, care and conscientious fidelity in recording results, and perhaps more patience with details than young men. Although woman is usually so far less independent and has less originality, she often makes an ideal research assistant (which, a French physicist tells me, is really the relation of Madame and Monsieur Currie). Here she has shown almost boundless capacity for taking pains and sometimes rare perseverance in controlling conditions and overcoming obstacles, and I may add, power of recovery from mistakes that sometimes require abandonment of labored results in making a new start.

4. As a compiler of the literature of a special topic in which she is interested a competent woman seems almost peerless. She readily masters the methods and resources of the library, and, so far as she knows the languages, runs down even obscure and remote references, and is an excellent quoter and digester of opinions and results. She loves to cite authorities and collect and mass references, and even to make bibliographies.

5. In education, while I cannot think of any pedagogic treatise of great value yet published by a woman except in the kindergarten, she has a rare genius for teaching young children, and I am often impressed with the fact that many of the great authorities in the history of education owe the methods which they have formulated to her initiation. They devise modes of approaching the youthful mind and of instilling knowledge into it, without knowing the value of their discoveries which men have appreciated and set forth. Indeed woman is here almost a creative genius, and the best the male pedagogue can do is to watch her ways and devices as he observes the great phenomena of nature, and then objectify, systematize, and record them. As the teaching of the young is rapidly falling into her hands throughout the world, it seems only common-sense that every university should do something to improve the quality of her work and to supplement her intuitive tact and taste by all available knowledge. That so many universities still do so little to develop this talent, now of such growing importance for all civilizations, seems a point against which the feminists might with most strategic wisdom focus their attacks.

There is also a subtle mental stimulus of each sex by the other which, although still perhaps most felt by women, is a resource in this field which we have yet to learn to use wisely. This is often seen in the case of married students whose graduate wives reinforce and supplement their work, or in rarer cases do the best part of it themselves. Although marriage of intellectual counterparts may not be its highest ideal it certainly is becoming more common and has in some conspicuous and in many less-known cases aided the progress of science. There are husbands who both consciously and unconsciously owe the best

they have done to the women who have wrought with them at every step, and for those who want this kind of a wife she should be available.

I have no right to speak of other departments, but we all know that in many educational institutions girls gravitate toward some subjects which boys tend to leave, and *vice versa*; that girls often have rare gifts for literature, for language and expression, for arts and even mathematics, while very few excel in science. Why is this subject so tabooed that we cannot have as free and frank expressions of opinion as mine from many representatives of all departments; opinions that do not merely affirm the old identity theory of no sex in mind, but that bring out the more recondite but no less real differences, for it is these that are now in order? That no college for the education of girls or for coeducation, save only Chicago which not only deserves great praise therefor but has probably marked an epoch, has made any study of this problem on which so many valuable data are going to waste, seems to me at least strange. On the negro question there were also long too hostile views; one that the black man was inferior and by his very nature servile, and the other that he was or must be made the political and even social equal of the white man. The genius or common-sense of Booker Washington has changed the whole basis of this discussion and the lines of division, and found a new solution by the study of the negro nature, needs, and the situation. So of woman, the inferiority *versus* the identity theory so long opposed must now be superseded by a new educational policy based upon natural differences. The day of the professor who has taught both sexes together and with no discrimination for twenty years, and who gravely rises to testify that he sees no difference, is past. Now that woman has won in the thirty years' war for equal opportunity sex should be no longer a sect.

The differentiation is in every tissue, organ, and faculty. She is more conservative, less diverse from other members of her sex than man, less prone to deformity of body and to specialization of mental activity, less disposed to every vice save ruse and deception, and to every crime save infanticide. Her altruism and self-consciousness always incline her to overdo and to take out of her system more than it can bear to bear. The present approximation of matter and methods of work in high school and college has at least certain elements of degeneration for both sexes. It repels boys from the upper high-school grades and from certain college classes and virifies the tastes and ideals of girls, many of whom wish they had been born boys, when our need is to push sex distinctions to the uttermost and make man ever more manly and woman more womanly. But just in proportion as we learn what she can best do and how, and what not, both she and the higher education will gain far more than they will lose, and the present danger of unsexing herself to enter the higher grades will diminish.

Perhaps the gravest danger of our American system of higher education is revealed in the fact, as shown in detail by a pamphlet in my hand, that twenty years after graduation about one-half of the college girls of three women's colleges and about one-fourth of the graduates of nine eastern colleges for men are unmarried, few marry later than twenty

years after graduation, and that those who do marry have but two children per marriage and less than three per parent. Now if civilization is man's self-domestication and higher education is its acme, why should not the test of fertility also apply to it as well as to domestication, and if our academic youth and maidens are God's chosen ones why should not the Abrahamic promise of fecundity apply to them if they keep covenant with their own nature? Are we not losing our labor if the educational classes are plowed under as at present, and culture is not transmitted into that most ancient form of wealth and worth, heredity? Nothing that is not so completely assimilated that it affects the unborn is completely acquired, and any education that develops progressive sterility or race suicide is a failure. At present our higher education would soon depopulate the country if it became universal. If there is any truth in the old saw of Huxley that an ounce of heredity is worth a ton of education, it follows that if our academic culture makes the supreme joy of parenthood less ardently craved or makes it less effective, it is already biologically bankrupt. Thus, as this evil is worse with woman, and as man unaided by her can never hope to solve all the problems of her sex, another argument for the very highest education of the few best women is that thus, somehow and somewhere, one may arise who will find out the new and better way.

DISCUSSION OF PAPER ON COINSTRUCTION IN GRADUATE SCHOOLS

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. WEST: I am surprised that neither of the gentlemen have touched upon the question of the admission of men into the graduate schools of women's colleges. Very little recognition is given to the fact that they are the only places—except in the University I represent—where that coinstruction is not carried out in the graduate schools.

MR. MUNROE SMITH: As the first paper alluded to conditions in Columbia, and as the writer seemed to have some difficulty in reconciling the statements received by him, I may say for information that the existing state of things is this: Women are not admitted to any of the professional schools at Columbia which are controlled entirely by the Columbia trustees. They could not be admitted to the Medical Department of the University simply by the action of the trustees, for the reason that when the Medical School ceased to be a proprietary school and surrendered its property to the University, two rights were reserved by the medical faculty—the right of nomination to the faculty itself, and the right of determining whether or not women should be admitted. Consequently women could not be admitted to the Medical Department of Columbia University except by the concurrent action of the trustees of Columbia and of the medical faculty. At the same time there are two affiliated, or federated, professional schools in our system, to which women are admitted. They are the Teachers College, which we regard as a professional school, and the College of Pharmacy. But of the professional schools wholly under the jurisdiction of Columbia, none is open to women.

On the other hand, as far back as 1891, the trustees voted that any course in any of the non-

professional graduate schools might be opened to women with the consent of the president and of the instructor concerned. As perhaps some of you know, our Graduate Department is divided into three schools—philosophy, pure (natural) science, and political science. At the time this trustee resolution was passed there was no graduate school of pure science, and the resolution referred only to the schools of philosophy and political science. Subsequently, when the school of pure science was established, the trustees gave the same authorization there. Consequently the status of women at present is this: The trustees permit them to be admitted to all the non-professional graduate work, but the trustees do not force any instructor to open his courses. And since that, by virtue of an agreement between Barnard College and the University, there has been a further qualification of the rights of women. That is to say, women are not to be admitted without the consent of the faculty concerned. Consequently, for the admission of women into these non-professional courses it is necessary that the faculty concerned shall authorize the opening of the courses; that the instructor concerned shall open his courses; and that the president of the university shall give his approval.

Now, as a matter of fact, after some hesitation in the cases of political science and pure science, all the faculties engaged in graduate work at Columbia have authorized the admission of women, and most of the single professors have done so. I believe there are some laboratory courses in pure science not open to women. There are very few courses in philosophy and letters that are not open to them. In political science one branch has been kept closed, namely, public law and jurisprudence. The work in this branch is very intimately connected with the Law School, and as women are not admitted to the Law School, it does not seem desirable to admit them to the public law courses. Consequently women are at present admitted to all the economic and historical courses, but not to the public law and jurisprudence courses.

As I look back on the history of the opening of the graduate work of Columbia to women, it seems to me that the whole question was determined by economic considerations. I do not think there was a positive desire on the part of a majority of the teaching force that women should be admitted to coinstruction, but there was a feeling that women ought to have a chance and that it was impossible to duplicate real university work.

I cannot contribute anything from my personal experience to the questions under discussion, because I have had no women students. At the same time, there has been considerable exchange of views among the members of the graduate faculties, and those of us who are not teaching graduate women have heard the views of those who are teaching them.

Now, as to the attitude of the men who are actually engaged in such work, which is usually stated much more frankly, of course, in confidential, private conversation than in a written and permanent form, there is a very strong undercurrent of feeling very much in the line of some of Mr. Stanley Hall's suggestions. Some men who are teaching graduate men and women at Columbia, have had previous experience in women's colleges—experience in graduate work as well as undergraduate. What these men seem to be coming to think more and more is this: That it is probably a misfortune that the training of women is modeled so closely and strictly upon that given to men—a misfortune for the women themselves. Most of these men seem to believe, as Mr. Stanley Hall has suggested, that there are certain fields in which some women can do better work—possibly even better research work—than men; and they seem to feel that it is a pity that not only the collegiate but the university instruction of women should not be so modified as to bring out and develop the

special faculties which seem to be more feminine than masculine. Most of them have the feeling that there are such faculties. As to what they are, few of them will speak with any definiteness. The matter, in their minds, is one that needs investigation by continued experiment.

It seems to me that these views are based upon assumptions which are probably correct. It seems to me that the weakness of the whole feminist movement, from the higher education to the woman suffrage movement, lies in the assumption that feminine differences are inferiorities and that women are to be improved by treating them, as far as possible, like men. That, it seems to me, is wrong. It seems to me that civilization began with, and has advanced by, differentiation of men's and women's activities. In the savage races men and women are much more alike, largely because they do much the same things. You find women engaged not only in agriculture, but also in fighting. Instances of that are to be found from the Amazons down to Dahomey. With increasing differentiation of work, there has been an increasing differentiation of physical and mental characteristics. I think that every unbiased person admits that there are mental differences. I do not know that I ever heard them more sharply defined than by Doctor Mary Putnam Jacobi. In a public address delivered some years ago in New York, Dr. Jacobi said that the feminine mind is distinguished from the masculine mind by superficiality, discursiveness, and a purely personal view of things. Then she went on to say that these qualities were just as valuable as the opposite qualities in man; that superficiality meant close attention to the outside of things, which is just as important as the inside; that discursiveness meant capacity to think of many things at the same time, which is the very basis of what we call executive ability; and that the personal view of things is quite as important as the abstract, since this world would be a very cheerless place if nobody took the personal view.

Now, if women have different capacities from those of men, and if, as I believe, they have higher capacities in certain directions, it should be the object of the higher education of women to develop these higher capacities; to find out the things they can do, not merely as well as but better than men. It seems to me that the process of putting women through exactly the same educational machinery as men not only will not tend to help us to discover these capacities, but rather to retard any such discovery.

I think it is very fortunate, therefore, that college education of women is being separated from that of men, and I think it would be most fortunate if a great university that should be open to women only could be endowed on a scale to secure the best teaching talent. I should like, further, in such a university to see chairs filled by men only so long as no women could be found capable of filling them. I should like to see the experiment of graduate work for women conducted exclusively by women. But at the present time such an experiment is probably impossible, because of the impossibility of obtaining adequate endowment.

For the present it is of first importance that the men who are conducting the graduate work of women should try to find out whether there are things that women can do better than men. I have asked some of my colleagues about this, and I have found a general feeling among the persons engaged in advanced work in literature that women seem to be especially capable there; that some of them seem to have very fine critical appreciation. The only criticism I have heard upon the work of women in this field is that they are partisans. One of our professors of literature said that he found that even advanced women graduates, when they like an author, dislike very much to admit that there are any defects in his literary style or any unpleasant traits in his personal charac-

ter. That, of course, is an illustration of Dr. Jacobi's statement that the feminine view has an attractive personal quality which the masculine view lacks.

MR. PAGE: Like Mr. West I am not able to add anything from my personal experience to this discussion. Yet although Virginia has never yet admitted women, I believe that the time is gradually approaching when they will be admitted in small numbers to graduate work. There has recently been a considerable revolution of sentiment among the faculty, a good many new members being decidedly in favor of this course.

MR. WELCH: I do not think we are prepared to draw any far-reaching conclusions from our experience with coeducation at the Johns Hopkins Medical School. It was not in the first instance the free choice of our faculty to adopt coeducation in medicine. The alternative was placed before us of accepting an endowment on the condition of having coeducation, or of not having a medical school at all. We, of course, decided to found the medical school on this coeducational basis. Many of us anticipated great difficulties and embarrassments. Nevertheless, they have not presented themselves, and I suppose if today it were a matter of absolutely free choice with us we would not hesitate to continue the present system.

Our conditions require that we shall give the same courses, that the instruction shall be identical for men and for women. There are no separate courses for women, but they do not take that in male genito-urinary diseases, although permitted to do so. But it is unwarranted to draw any very general conclusion from our experience because, first, we have an exceptional group of women, in consequence of our standards for admission; not only a Bachelor's degree, but a specified practical training in certain premedical sciences being required. And secondly, while the medical school has grown rapidly and largely, the percentage of women has not increased and remains small.

With regard to the fitness of women for the study of medicine, Mr. Hall's position would be supported in general by medical opinion; differences of sex are not merely physical, but mental as well. Nevertheless, among the women students there have been some as good as the best of the men. I do not think that the present opportunities afford women the chances of distinction open to men. Very few hospital positions are open to women after graduation. In the pursuit of the more scientific branches women can serve for a while as junior assistants in laboratory work, but it can scarcely be said that at present an academic career in medicine is open to them. While there may be a difference in capacity, there are just as capable women doctors as men, but they have not now the same chance to obtain distinction in practice or in scientific pursuit along medical lines.

MR. CRANE: Construction in medicine is a separate matter, it seems to me, turning on things quite different from those that affect the central part of the discussion. The objections pointed out in connection with professional schools having a fixed curriculum are minimized in the ordinary graduate instruction of men and women. Such work is largely personal, and although men and women may be associated in it, I do not think that the strict, uniform standards of the man must, without any consideration of the differences of sex, apply to the women.

MR. VAN HISE: As at Chicago, the results of our granting fellowships to the women have not been satisfactory, so far as productive work is concerned. The capacity for constant intellectual effort along one definite line seems to me a very uncommon quality to find in women. (We know

it is an uncommon quality in man.) While I would not curtail or refuse to admit women in the graduate schools I do not expect proportionate results from their work.

THE CHAIRMAN: What is the effect upon the character of instruction of the influx of a large number of graduate women in a class?

MR. CARVER: In an undergraduate college where I taught for six years, the proportion of women to men in my classes was generally about one to four, and I do not think that their presence in any way lowered the standard of work. It was necessary, however, to adopt a somewhat different standard in marking, for I was never able to invent an examination paper which, judged solely as a paper, the women would not on the average pass better than the men; not that they knew more about it than the men, but that they seemed to specialize better and make better papers. So I adopted the policy of marking their papers a little more severely than those of the men, and told them so frankly. In reply to complaints I said: "I am trying to mark your work in the course, and I don't think the examination is a complete test." This is perhaps one of the differences between the sexes which Mr. Hall has mentioned; the women seem to care more for the grade and for a degree. As to their ability to learn in the field of economics, I could not see that there was any difference in undergraduate work.

MR. SMALL: For eleven years I taught mixed classes, and I noticed that women who had, up to the Senior class, ranked first were just beginning to fall back; by that time their studies were beginning to call for critical capacity rather than memorizing. In the graduate school for thirteen years I have had 5 per cent., on an average, of women in my classes. In order to arouse criticism in their minds it has invariably been necessary to approach nearer to the point of absurdity in stating propositions than in the case of men. I have never found any difficulty in getting the men to find opportunities, but it is a very rare occurrence for a woman to venture, to challenge the statement of the professor. The possible influence of the presence of women in our courses to a degree that would influence graduate instruction is a contingency not yet in sight. Women in equal number might change the quality of the instruction, or the manner or attitude of the instructor, but in my experience, with only 5 to 10 per cent., their influence is zero.

MR. STRINGHAM: Some of our professors have gone so far as to divide their classes into two groups, placing the young women in one group, the young men in another, preferring to repeat the work of a graduate seminary, on the ground that it is desirable to present the subject differently to the different sexes. Personally I have not found this necessary, but in our graduate work in mathematics the proportion of women is very small. In several departments I think there is a tendency for the women and the men to separate voluntarily by electing different courses. We are not forcing a solution of this problem in California, and it is too early for us to draw any very definite conclusions.

MR. CARVER: Does Mr. Small find a real difference in critical ability, or is it a difference in pugnacity? I seemed to find that if the women knew you wanted them to show a critical attitude, or if it were necessary to show a critical attitude to get good grades, they would show it. They do not like to show pugnacity or combativeness. They prefer, unless they find out you want them to do otherwise, to accept what you say.

MR. SMALL: My judgment is it is both the unwillingness to be pugnacious and the difficulty of doing thoroughly objective critical work. I have in mind a recent case in which a very well-trained woman has been struggling with a criticism of a very dear friend of hers. The man is evidently in the wrong, but the woman is unable to detach herself from the personal point of view. And that is, I think, a difficulty that women always experience.

MR. CARVER: In the question of scientific analysis with no personal element entering do you find the same thing?

MR. SMALL: I think there is a difference of ability, but I would not claim that my basis of induction is a sufficient one.

MR. HALL: In the correspondence regarding this question several people express the opinion that in the colleges at least, and perhaps in universities, women, although taking the higher education or the highest education, had not sufficient depth of interest; that their minds were so conventionalized, perhaps by nature, that they strove for success for its conventional effect rather than for their general interest in the studies themselves; that real scientific interest did not exist. One writer excepted literature and art, and perhaps one or two other things. One or two wrote that wherever the instruction was largely with books or requiring reproduction or assimilation, there women generally did excellently, but the moment they were thrown upon their own resources, either in elementary or advanced work, and asked questions with no authorities given, there they always fail. There were strong expressions in these letters to the effect that this question, one where education has to do with general principle of biology and life, ought to be studied and ventilated with great care. We ought to know whom we are training, and whether we are spoiling a mother to make a good specialist.

MR. CARVER: Returning to this subject of originality: I went into the teaching of coeducational classes believing that women did lack originality and the ability to work out problems for themselves; but I have been forced to the conviction that we have simply been saying that over and over until we believe it. My experience is that a woman, if she is expected to show originality, will show it. She will do it if she has the necessity to do it.

MR. CUBBERLEY: The question seems, so far as my experience goes, to be largely an individual one. There are departments with us which have hardly any women as major students, while on the other hand certain other departments have scarcely any men. Changes in department heads or department policy have in a few cases materially changed the proportions of the two sexes enrolled in them. With a free elective system the personality and the teaching power of a department head is a factor that cannot be disregarded. My experience is that the best and the worst students I get are men, the women staying nearer, though rather above, the normal type. Women seem less willing to do advanced work, or to go ahead and try to do a thing better than someone else has done it. I get better results with women, I think, when I outline a definite piece of work to be done.

THE FOURTH SESSION

THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN
STATE UNIVERSITIES

PAPER PRESENTED BY CHARLES R. VAN HISE, OF THE UNIVERSITY OF WISCONSIN

If I were categorically to answer the question, What are the opportunities for higher instruction and research in state universities? the reply would be somewhat as follows: The opportunities for higher instruction and research in some state universities are as great as in the average of private institutions of similar incomes. But this answer would represent my personal view merely, and therefore needs support. The question under consideration may be discussed from two points of view—the present opportunities for advanced instruction and research in state universities, and the probable future opportunities.

With reference to present, but especially with reference to future, opportunities the states should be divided into two groups—those in which the state funds for collegiate and university education are united, and those in which they are divided. Belonging to the first group, among others, are, California, Illinois, Minnesota, Nebraska, and Wisconsin. The states of the second group are much more numerous. In many of the northern and western states the state grants are divided between two or three institutions. In a number of the southern states the funds are still further divided because of the separate provisions for the education of the whites and blacks. The most notable of the state universities in states where there is division of state funds is Michigan. But this university gained a dominant position in the state before the Agricultural and Mining Schools became important and hence has an exceptional position among the institutions in states of the second group. The problem of advanced instruction and research in state universities is in general very much less difficult in the states where all of the higher educational interests of the state are united than in those states where the funds are divided. But I have no doubt that even in the latter group of states a number of state universities will in the future gain predominant positions in their respective states similar to that held by Michigan.

The state universities began as small teaching colleges, as did the universities of the East, members of this Association, with two exceptions. Many of the state universities, and especially those in the newer and less-developed states, are still in this condition. As the state universities in the wealthier and older states of the Middle West and in California became somewhat more prosperous they, like the universities of the East at a similar stage of growth, began to do advanced work. At the present time most of the departments in the colleges of liberal arts of the larger state universities are attempting to do such work.

While in general research work was not undertaken at the outset by the state universities, an exception should be made with reference to some of the colleges of agriculture,

which are integral parts of state universities. As a result of the Hatch Act, a number of these colleges are fortunate in having a special fund of fifteen thousand dollars per annum for investigation. When this fund was granted some of these colleges of agriculture had almost no instructional work to perform. Thus it happened that in a number of state universities the colleges of agriculture were the earliest to engage to an important extent in research work. Indeed for a time this was their chief function.

As yet the colleges of engineering are somewhat behind the colleges of liberal arts and the colleges of agriculture in the development of advanced instruction and research, but recently certain of these colleges, notably those of Illinois and the State College of Iowa, have received appropriations from their states for the purpose of investigation. In other colleges of engineering where such appropriations have not been made, investigations have been carried on to a varying extent, and in some of them important work has been done.

The incomes of the state universities are in large part given without restriction as to division between instruction and productive scholarship. In this respect I suspect the funds are as free from restriction upon the average as in private institutions. Whether the annual state grants shall go for instruction or for research is in most cases a matter which the governing bodies of the universities decide.

The power of state universities to do productive work is often underestimated because they have no large endowments. A fair way to compare this power with that of private institutions is upon the basis of income. Michigan, California, Illinois, and Wisconsin each had an income for the year 1903-4 of between seven hundred and fifty thousand and nine hundred and fifty thousand dollars. Iowa, Minnesota, Missouri, Nebraska, and Ohio, each had an income between four hundred thousand and six hundred thousand dollars. Of these incomes the larger portions are directly from the states. Smaller amounts are from the United States and from the interest upon invested funds. The totals of the continuing incomes from these sources vary from about six-tenths to about nine-tenths of the entire incomes of the institutions named. If one were to capitalize these permanent continuing incomes at 4 per cent. they would be equivalent, for the first group, to endowments ranging between ten millions and twenty millions of dollars, and for the second group between six millions and ten millions of dollars.

But it may be said that state universities are uncertain as to the continuance of their incomes. This view is not substantiated by the facts. I do not know of any important state university which within the past score of years has had a permanent setback or large reduction of its income. On the contrary, during this period the incomes from the states to nearly all of the important state universities have been increased in amount annually or biennially. Some of the state universities are supported by a direct tax, varying in amount from fifteen-hundredths of a mill to a mill. Other state universities have continuing annual appropriations which are added to at almost every session of the legislature. The incomes of others are appropriated annually or biennially. As illustrative of the situation among the institutions above named, it may be said that the legislatures of 1903

made largely increased appropriations for Illinois, California, Iowa, Minnesota, Missouri, and Wisconsin. It may further be said that in Wisconsin there has been no session of the legislature during the past fifteen years in which the University has not received either an increase in income or a special appropriation, or both. Indeed at most of the larger and at some of the smaller state universities it is taken for granted that each legislature will make some additional appropriation for the university. In a number of states where this is not true the universities have, as already noted, direct taxes for their support, which give increases of income from time to time because of the increases in the assessed valuation of the property of the states. Usually at any session of the legislature the only question at the larger state universities is not whether the support of the past will be continued, but how much the appropriation will be increased. At Wisconsin, in the year 1903, the permanent increase in income was placed at forty-eight thousand five hundred dollars per annum, and an additional special appropriation of two hundred thousand dollars was made. And this institution by no means furnishes the case of the largest increase in appropriations for that year.

The present comparative financial prosperity of the larger state universities has been attained within the past score of years, and the greatest advance has been within the last dozen years. The total of the incomes of the state universities having incomes varying from four hundred thousand to more than nine hundred and fifty thousand dollars per annum, namely, California, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, has doubled from the year 1898-99 to the year 1903-4, that is, in five years. If the total of the amounts appropriated by the states to these institutions for 1898-99 be compared with that for 1903-4, the latter amount is found to be two and one-half times the former.¹ The period of rapid expansion is apparently nowhere near its climax. Before a decade shall have gone by, it is certain that each of several state universities will have an annual income of more than a million dollars.

But it may be said that the amount of income does not determine the opportunities for advanced instruction and for investigation at state universities. It is therefore necessary to supplement the information as to incomes by definite statements upon these points. I am not sufficiently familiar with the conditions in the state universities to make general statements as to the opportunities for productive work, and therefore am obliged to give the facts at Wisconsin, with the belief that the situation there is very similar to that which obtains at several other state universities.

In dealing with the opportunities for higher instruction and research it is customary to give the material facilities offered for such work. If one were to consider merely this point of view, from the catalogues and various publications of the state universities it would

¹ The above comparisons are based upon figures obtained from the *Report of the Commissioner of Education* for the year 1898-99, and from a recently published statement by the National Association of State Universities for the year 1903-4. Since the figures are from different sources, it may be that they are not comparable. If this be so, the statements made may require modification.

be easy to show that several of them have ample material facilities, including laboratories, observatories, and libraries, to carry on advanced and investigative work in many lines.

But it seems to me that a better test upon the questions at issue than the material facilities is the character of the men who comprise the faculties of the institutions, and the spirit which obtains among them. There are various points of view from which the faculties might be considered with reference to advanced instruction and investigation. Among these are the basis upon which appointments to the faculty are made, the amount of instructional work demanded of the professors, and the productive capacity of the men themselves.

Upon the first point it may be said at Wisconsin it is the announced policy that in making appointments and promotions two qualifications only are considered—productive scholarship and capacity for efficient instruction. While there is an attempt to secure both in each new appointee, it is not too much to say that a man can hardly expect to get an appointment of a higher grade than instructor upon his record as a teacher alone.

If nearly the entire energy of the faculty be required for elementary instructional work, it is plain that individual attention cannot be given to advanced students, and that a faculty composed of men of whom such demands are made has not a surplus of energy to devote to research. At Wisconsin there is no fixed amount of instructional work required from a professor. The quantity of this work varies greatly. Where in the faculty there is a man who is not a productive scholar, he is likely to have rather heavy instructional work. Where, upon the other hand, there is a man who is doing things, he has large liberty as to the amount of instructional work which he carries, but some of the men who are intellectually fruitful do much administrative and instructional work.

Upon the whole it seems to me that the surest test of the opportunities for advanced instruction and research in a university is afforded by the amount of productive work which the instructional force itself is doing. A faculty pervaded by the spirit of research gives the atmosphere necessary for higher instruction. To such an atmosphere graduate students will be drawn. In such an atmosphere scholars and investigators will be produced. With this belief in mind I have asked the members of the instructional force of the University of Wisconsin to give information concerning the investigations which they have made during the time they have been at that institution, and also a statement of the researches upon which they are now engaged. In most cases the replies are sufficiently full to afford an approximate judgment of the importance of the work done. The answers show that the men reporting have produced a formidable list of works, from small studies to elaborate treatises. Of course, a large number of textbooks have appeared, but these are not considered in this connection. The answers show that at the present time about one hundred and thirty-five, somewhat less than two-thirds of the faculty, are engaged in productive work of some kind. About ninety of these may be called minor and about forty may be called major investigations. In making this discrimination I have regarded the minor investigations as those in which series of papers concerning disconnected subjects have been published, and have regarded the major investigations as those in which a general

line of work has been followed continuously for a considerable period of time. Thus men are placed among the minor investigators who give lists of many published papers, while other men are placed among the major investigators who as yet have not published more than two or three pieces of work. Among the studies and investigations which are ranked as major the larger part are of moderate importance. A few are large studies which have extended through several to many years and the results of which mark them as important contributions to knowledge.

The information furnished seems to be adequate evidence that at the present time a sufficient number of men are engaged in higher instruction and research at Wisconsin to give a favorable environment for such work. But this general statement required some qualification when applied to the individual departments. In many of the departments of instruction it is entirely true, but in others we must unfortunately admit that the task of raising them to the university plane largely remains to be accomplished.

I shall not compare the situation at Wisconsin with that at other state universities. I believe that substantially the same situation obtains at some of them, whether upon the whole more or less favorable than at Wisconsin I am unable to state. At many of the younger and smaller state universities a long road must be traveled before they reach the present condition of the more developed of their sisters. But this is no more than should be expected. Nor is it surprising that even the more highly developed state universities at the present time are not doing as much advanced work as the more powerful of the older private institutions. With the exception of Virginia, the stronger state universities are very young as compared with the universities of the East, which began as colleges and have developed into universities. Michigan and Wisconsin have had their jubilees, but the event is yet to come to California, and the greater number of larger state universities. Eastern universities, such as Harvard, Yale, Columbia, Princeton, and Pennsylvania, vary from one hundred and fifty to more than two hundred and fifty years old, and hence are from three to five times as old as the strong state universities, with the exception of Virginia. But even in the older universities of the East there was little money available for the systematic encouragement of advanced instruction and research until about a quarter of a century ago, and the oldest of the great private foundations of recent years, such as Hopkins, Clark, Chicago, and Stanford, was established but thirty years ago. Thus it is clear that the great growth in advanced instruction and in research in all the universities of the United States has taken place almost wholly within the past thirty years. It is therefore not surprising that it is scarcely a score of years since the young state universities began to develop those lines of work vigorously.

So much for the present opportunities for advanced instruction and research in the state universities. In many respects the subject is even more interesting with reference to the future. During the past quarter of a century I have seen Wisconsin change from a small college to its present condition of comparative prosperity. During the same period similar transformations have taken place in a number of state universities. I believe present

accomplishments to be the mere beginnings of the development of advanced instruction and research in state institutions. I expect to see these lines of work continue to expand until state universities in this country are doing the work for their respective states that the state universities of Germany are doing for the states of that empire. I am aware that there has been general disbelief upon this point in the past. I know that in many sections of the country the conviction is still widely held that the people will not tax themselves for work of university grade. I know that men may be found in the faculties of the state universities who hold this view. They may be found among the presidents of the group of larger state universities. But it seems to me that the facts of the development during the past twenty-five years clearly show those, who hold this view, to be wrong. Already in a number of states, the people *are* taxing themselves to support advanced instruction and research. Furthermore, and this is most important, in those institutions in which the most advanced stand has been taken with reference to high-grade work there is little or no objection to the movement. To illustrate: At Wisconsin I have had no criticism of the departments where there are several strong men who are doing productive work. The complaints which have come to me have been in reference to those departments where lack of funds or lack of courage on the part of the administration has prevented their advancement to a higher plane.

But suppose I am wrong in reference to the support by the state of advanced instruction and research. Still the question as to the place which these higher lines of work are to take in the state universities is open. Why should not a state university receive help from private funds for such purposes as well as other universities? No good reason can be assigned for the belief that state universities in the future will not receive liberal support from private funds. It is true that in the past this has not been the case, but the same was also true of private institutions until very recently. As already intimated, the great sums in the United States for advanced work in private institutions have been given within the past thirty years.

When the alumni of the state universities become numerous and some of them wealthy, why should they not give to these institutions as do the alumni of private universities? Indeed if there be any difference between the two, it should be in favor of the state institutions, for the men who have obtained their education at such universities have returned a considerably smaller proportion of its cost in fees than have those educated in private institutions. I hold the conviction firmly that in the future the alumni of state universities will give liberally to their support.

Nor do I believe that the gifts to state institutions will be derived from alumni alone. What valid reason can be assigned for the belief that the men who have gained their wealth by taking advantage of the natural resources of the states will not turn back some portion of this wealth for higher education? Indeed this has already begun. It is only within the past score of years in the middle and far West that we have seen large accumulations of capital, and have had the feeling of assured prosperity. Now that this situation has come about, gifts from private sources have begun to flow to the state universities. The

largest recipient has been the University of California. Wisconsin and other state universities have received smaller amounts.

In the past many of the men who have given money to educational institutions have been inspired by a religious motive. But in the United States at present there are a large number of men of wealth who are moved by the educational or ethical impulse, and who are not impelled by the religious motive. In the future such men I doubt not will give largely to state universities. To such persons it can be made clear that a state is at least as safe a trustee as any individual or corporation. The wealth of the people of an entire state is surely for such funds.

In conclusion, therefore, I hold that in the future the state universities will be in a much stronger position with reference to advanced instruction and research than at present. The state universities have an official hold upon their respective states. The states have a pride in them as their institutions. In each of a number of states the feeling is very general among the people, as well as the alumni, that their university must be developed to as high a plane as any private institution. This hold upon the state already secured by a number of the larger state universities is yet to be gained by others. Where this position has been attained there is no reason to believe that it will ever be lost. As already pointed out a number of states are now granting large sums of money to their universities for advanced instruction and research. It is my deep-seated conviction that state funds for such purposes are sure to increase greatly in amount. And in addition to the certain support by the state of productive scholarship, the state universities in the future have at least an equal right with private institutions to expect assistance from their alumni. Finally, the state universities may reasonably expect funds from wealthy men, not alumni, inspired by ethical and educational motives.

Therefore, it seems to me my initial proposition that the opportunities for higher instruction and research in some state universities are as great as in the average of private institutions of similar incomes, is conservative. Further, in the future these opportunities are certain to be rapidly improved and extended.

THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN STATE UNIVERSITIES

PAPER PRESENTED BY JAMES MORRIS PAGE, OF THE UNIVERSITY OF VIRGINIA

It would be a work of pure supererogation for me to make any argument before this body with a view to showing that the intellectual and material development of a country depends to a large extent upon the quality and amount of the higher instruction and research carried on by the higher institutions of learning of that country. Granted that it is axiomatic that each state should have at least one strong institution for the higher instruction, it follows necessarily that in most of the states of the Union this work, to be done at all, must

be done at the state university. Especially is this true of the southern and western states, where there are comparatively few private institutions of any strength.

The question has been raised, occasionally, of the propriety of expending, for higher instruction and research at the state university, money collected by taxing the people of the state. This, again, does not appear to me to be a debatable question. If we admit, as we have admitted, that it is proper to tax the people of a state to support common schools—or even to support the state government itself—we have to admit that money collected by taxation may properly be expended for higher instruction and research. In fact as it is the function of the state university to supply *general* rather than local needs, and as any individual common school can supply the needs only of the community in which it is located, it would seem clear that the state university is more properly the beneficiary of funds raised by general taxation than is the common school. Research being essential to the progress of civilization, both on the ideal and on the material side, the state cannot afford to leave it to the chances of private benefactions on the fallacious supposition that such work should be supported by charity. One of the principal objects of research is the investigation of practical problems nearly touching the life of the people, problems of an industrial, sociological, and political nature. The results of research are common property, the poorest and most illiterate reaping the benefits of the discoveries of a Koch, a Virchow, a Pasteur, a Reed, or of any important scientific discovery.

The encouragement of higher instruction and research by subsidies from the government is no new policy. Every enlightened state, whether ancient or modern, has pursued this policy to a greater or less extent. Moreover, in Germany and France, to cite concrete examples, this kind of work has long been supported by the government, in part or in whole, and we note with pleasure that the more popular the form of government of those countries becomes, the more liberally do they appropriate from the public funds for the higher education. A glance at the history of Germany for the last two generations would convince the most skeptical that there can be no better investment, even from the purely material standpoint, for a reasonable portion of the public funds, than in the encouragement of higher instruction and research. The cost of the investigations which have enabled Germany to compete successfully with England in the production of manufactured goods for the world's market, has been repaid to Germany a thousand fold. Moreover, the experts and specialists trained at the German universities do not form merely a small class of assumedly unpractical teachers: it is just from this class that their leaders in every practical walk of life are drawn—from the consummate statesman, who directs the imperial policy, to the expert commercial traveler, who is the best of his kind in existence. The Germans are thoroughly convinced of the fact that if the state will take care of its university, the university will take care of the state.

When my attention was first called to this subject I asked myself whether it could be possible that those in authority at any state university in this country consider higher instruction and research as not properly belonging to the functions of a state university.

But replies to inquiries sent to all of the state universities showed that in no single case was higher instruction and research regarded as other than a legitimate part of the work, to be paid for by the state. Most of the heads of the state universities expressed themselves very vigorously upon the subject—some holding that this class of work is the work *par excellence* of the state university, as the undergraduate work might, at a pinch, be done at colleges. On account of location, or other circumstances, some branches of research are primarily more appropriate than others for certain institutions; but no state university, which can command the necessary means, can afford to neglect permanently any important branch of endeavor. More than half of the activities of the agricultural experiment stations are said to be devoted to research; and the standard of work done by them has been vastly improved within the last ten years.

With regard to the opportunities for higher instruction and research which exist at present in state universities, I take it that I am expected to speak principally of southern universities. I shall attempt to give some account, therefore, of what is being done in this direction in southern state universities, prefacing what I have to say, however, with the *caution* that the information which I have been able to gather is almost certainly incomplete.

The southern states, I need hardly say, are far behind most of those of the north-central and western divisions in facilities for higher instruction. This is no doubt partly due to poverty in the South. But vastly more might be done by the southern people for their own uplift than is done. The trouble is that they have not yet realized their comparative backwardness in educational development; or that, especially for material growth, the expert or specialist is necessary. A great deal has been done of recent years to stir up the southern people to readjust and improve their common-school system, and to submit to increased taxation for this purpose. But the enthusiasts in this, in itself excellent, movement seem to have overlooked the fact that educational influences *descend* rather than *ascend*, and that strong state universities entail strong secondary and primary schools.

In addition to not realizing what is necessary for the development of the country through higher education, the grave error has been made in some southern states of expending the money appropriated for so-called higher education upon several state institutions—preventing any one of them from attaining the very first rank. Even Jefferson, with his immense influence, struggled in vain to introduce *system* in the educational development of Virginia; although he did convince Virginians that a state should develop intellectual resources as well as physical.

Many of the great north-central and western states have profited by the mistakes made by some of the older states in this direction. In the majority of the states west of the Alleghenies the funds appropriated for the support of higher education in the state are bestowed upon one institution—the state university: and as a rule, the state agricultural experiment station, subsidized by the United States government, is annexed to, or under the control of, the state university. We have heard of at least one case in which a middle-western state practically abandoned two of its weaker institutions in order to concentrate upon and develop

a third—with admirable results. One of the most instructive phenomena in recent educational history has been the astounding growth of the Western State University—combining, as it does, the best traits of the English and German universities with a number of new ones peculiar to itself. It is to be hoped that the older southern states, where there was as much lack of system in the practical development of the educational forces of the state as there was in laying out the old cities, will profit by the example of their western neighbors—in the first place, by providing more adequate means for educational purposes; and, in the second place, by expending the money wisely and judiciously with a view to having at least one strong institution for higher instruction and research in each state.

I have tried to obtain, both by direct inquiry and by studying lists of printed publications, some definite information as to the kind and amount of higher instruction and research undertaken at the highest educational institution under state control in each of the following thirteen south-Atlantic and south-central states: Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas. At the highest state institution in each of these states what are called "graduate courses" are offered; that is courses open only to a student who already holds a baccalaureate degree, and leading to the degree of Master of Arts. These seem to be exclusively culture-courses, more extensive in character, however, than those leading to the B.A. degree. Four of these institutions, viz., the University of Virginia, the University of West Virginia, the University of North Carolina, and the University of Mississippi also confer the degree of Doctor of Philosophy, upon the conditions usually required. With regard to the time when these four universities first conferred the Ph.D., and the number of times the degree has been conferred, I have obtained the following information:

	Ph.D. First Conferred	No. of Ph.D.'s
University of Mississippi	1877	4 in 28 years
University of North Carolina	1884	13 in 20 years
University of West Virginia	1903	1 in 2 years
University of Virginia	1885	35 in 20 years

The number of graduate students in all of these institutions forms a very small proportion of the whole number of academic students—apparently about 5 per cent. It was very difficult, however, to get accurate information about this matter, as the definition of "graduate student" varies somewhat with the institution. At the University of Virginia, for example, we list as a graduate student one who holds a baccalaureate degree, and who is pursuing graduate work in at least one subject. Quite frequently we have students holding the B.A. degree of other institutions, who are listed as undergraduates, because they have no graduate work with us. This method of distinguishing the graduate from the undergraduate does not seem to obtain generally in the South; and in arriving at the number of graduates and undergraduates in southern institutions, I have merely counted them as listed in the catalogues, without attempting to discover the method of subdividing. According to the Report of the Commissioner of Education for 1902, the number of graduate

students in all state institutions in the above thirteen states—that is, in technical schools or courses as well as in academic courses—was 2.8 per cent. of the whole number of graduate and undergraduate students in those institutions. I find from the report of 1897 that this percentage was 3.2; so that there were fewer graduate students in 1902 in comparison to the whole number of students than in 1897. This does not mean, of course, that the whole number of graduate students has decreased, but merely that the number has not grown as rapidly, relatively, as the number of undergraduate students. The number of graduate students increased by about 20 per cent.; and the undergraduates by 33½ per cent. during the period from 1897 to 1902. The same phenomenon may be observed with regard to the state institutions of the twelve north-central states: in 1902, the graduate students form 5.4 per cent. of the whole number of students, while in 1897 they form 6.8 per cent. of the whole number. This state of affairs appears to me to be temporary, and was brought about, no doubt, by the spirit of commercialism which has swept over the country within the last few years—inducing, in the South, at least, a disproportionately large number of students to rush through a short technical course with a view to turning their modest store of information immediately into money.

We find, therefore, that provision has been made in at least one state institution, in each of the above-mentioned southern and south-central states, for graduate instruction—of a modest kind frequently—leading to the A.M. degree, while in each of four of these states, one state institution confers the Doctorate of Philosophy, and demands a dissertation representing research from the candidate for this degree.

Information with regard to the kind and amount of research actually undertaken at southern state institutions within recent years has been difficult to obtain. A certain amount of research, naturally, is carried on at each of the state agricultural experiment stations. In addition, I have learned that at the following southern universities, the results of research along the lines indicated below have been recently published:

At the University of Texas: Principally in Chemistry and Geology.

At the University of Tennessee: Principally in Chemistry and Physics.

At the University of Georgia: In Chemistry, and in the History of Georgia.

At the University of North Carolina: Principally in Chemistry, Biology, History, and English.

At the University of Virginia: To some extent in all of the schools of the Academic Department, principally, perhaps, in Chemistry, Physics, Astronomy, Mathematics, and English.

A few small appropriations have been made by the Carnegie Institution, by the National Academy of Sciences, or by the American Chemical Society, to pay for certain special research at the University of Georgia, the University of North Carolina, or the University of Virginia. At the last-named institution some research has been undertaken by members of the faculty almost from the beginning—in 1825.

The presidents of southern state universities have reported that the prospects for the

development of the higher instruction and research in their institutions within the reasonably near future are uniformly bright. The Reports of the United States Commissioner of Education for 1897 and 1902 show that in that interval of five years the sum total of the incomes from all sources of the state universities in the thirteen states repeatedly mentioned was increased by about 100 per cent. This was exclusive of special benefactions. During the same interval the sum total of the incomes of all the universities and colleges, public and private, in the same thirteen states increased only about 40 per cent. This seems to show that the financial outlook for educational institutions owned and controlled by the state, is very flattering.

In considering future prospects, I see no reason to anticipate troubles of political origin for the state institutions. The terrors of this bugbear have been practically done away with. There is no surer way for the practical politician to commit political suicide than to tamper with the public schools, the principal one of which is the state university. There is no reason to dread an instability or narrowing of plans and purposes on account of state control. I know of no case in which a projected educational expansion had to be given up on account of the state's withdrawing her promised support. All institutions are liable to financial loss; and state institutions are rather less so, I think, than private ones.

The people of the great West are practically unanimous in favoring strong support for their state universities. The people of the South will be forced to follow their example—if for no other reason, in order to bring about the great material uplift which they are confidently expecting. Germany has one institution for higher instruction for every 2,000,000 inhabitants, approximately. Few of our southern states have 2,000,000 inhabitants—and they are burdened with the negro. But southern people are not content to lag at the rear of the procession, when they have realized that that is their position; and I confidently predict that within a few decades there will be in each of the larger southern states a strong state university, repaying a thousand fold the liberal bounty of the state.

DISCUSSION OF THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN STATE UNIVERSITIES

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HALL: It seems to me we have to look forward to a change somewhat similar to that taking place in secondary education. For instance, in New England there was a time when pretty nearly all the secondary education was in the hands of endowed schools—the old academies. When the larger municipalities began to establish high schools there was a great deal of controversy, because this would hurt the old academies. It was said that the people should not be taxed to educate for the higher education, as that was called. And now those of us who represent the old endowed institutions have to look forward with such philosophical equanimity as we can muster to a time when the same thing is going to take place in the college and university grades; of the

day when the proud eastern endowed college is going to pale before the glory of these great state universities. With regard to Mr. Van Hise's opinion that state universities are as likely to attract private endowments as the eastern institutions; we are in the habit of thinking that because in Germany and France private munificence is very rare that that is likely to be the case here; but this need not be the case. Three, at least, of the large universities of the East have shown considerable concern about the shrinkage in the area of supply for their students. The geographical map shows that they are becoming local institutions. Finally there must be some caution in drawing inferences about research from the state systems of Europe, especially Germany, and the state universities. The latter are supported by the states, because the great reinforcement has come in support of agriculture and similar practical interests, and the research must be primarily of that character. The German institutions were established and are supported on a different basis; to express the national spirit and also to reinforce the vast body of civil service. They are as careful about these old questions of the humanities, and the like, as our largest endowed institutions.

In this association we need a definition as to just what research means. The feeling of twenty-five years ago that a university was a place where uselessness was a little at a premium, and that there was a danger of soiling the pure love of knowledge if utilities were in sight, is now giving way to that other feeling that the best sort of research is going to be that which is applied, and that the usefulness of a discovery is the best and most legitimate motive for the investigator of the future. He is not to be a mere money-maker, a mere applier of other people's discoveries, but he is to find a legitimate inception in his work that is going to make its scientific value greater, from the fact that it is to be used to uplift the race in some way. If this is so, it makes the problem of the universities that are educating for research a very serious one for the future of the old endowed institutions.

MR. VAN HISE: The state institutions in the West are following two different policies in respect to the technical schools. Some states concentrate all of the funds which go for higher education at one institution, others divide their funds between two or more different organizations. The men connected with institutions where the funds are consolidated think there is no doubt that this is advisable. In such universities the work in the languages and the sciences for the technical students is done in the departments of liberal arts. The technical school is thus able to concentrate its entire fund upon its special work. For instance, a college of agriculture, connected with a university, is not obliged to maintain departments of pure chemistry, physics, or botany. All this work is done in the college of liberal arts. The department of agriculture maintains only the applications of pure science to the problems of agriculture. Thus the students in the schools of applied knowledge gain their training in fundamental subjects in the college of liberal arts. In this way they obtain a much broader foundation for the work upon which their applied sciences should be built than is possible in many of the schools of applied science. In every state university in the West in which the technical schools and colleges of liberal arts are united it is taken for granted that the union is of great advantage to the technical schools, not only as producing better educated technical men, but as conserving the special funds of the technical schools.

Also the college of liberal arts and the graduate school gain from the association with the technical schools. The students in the former organizations have opportunities to broaden their education by electing subjects in the technical departments. Further, the discoveries of the colleges of agriculture and of engineering, of material value to the state, are powerful levers in securing

general university funds. In those states in which the funds are divided this is in general regretted, both by the technical men and the men connected with the institutions given the name of university.

MR. CARVER: With regard to the probable future of the state universities of the West as compared with the endowed institutions of the East, there is possibly a natural corrective which will prevent the endowed institution from taking a secondary position, one which seems to be already showing itself as between the public high schools and the private academies. That is the growing effeminization of the public high school, which is beginning already to occasion a renewed interest in the endowed academies. Parents frequently prefer to send their boys to endowed academies rather than to have one or two boys in a large class of girls in the high school. I should not be surprised if in twenty-five years, or at most fifty years, we would find in all the strictly coeducational institutions about the same proportion between men and women as that which we now find in the public high schools. The endowed institutions are as yet, and probably will be for some time, in a position to deal with that problem more effectually than the state institutions can. Having been myself brought up in the West I always took it for granted that coeducation was a part of the providential ordering of the universe, but nevertheless, I think that this corrective tendency is likely to show itself.

I think I heard a suggestion in Mr. Van Hise's paper that the man who was not capable of productive scholarship could hardly hope for advancement beyond the grade of instructor. It seems to me we ought to consider the claims of the man who, to paraphrase Falstaff, is not so much a productive scholar himself as the cause of productive scholarship in others. I recall one man whose most admiring students still speak of his attempts at productive scholarship with an apologetic smile but who, nevertheless, was one of the most effective directors in advanced instruction and research whom I suppose this country has ever produced. Before we relegate to the rear a man who is merely an effective instructor, and not a productive scholar, we should consider pretty carefully whether after all he is not as valuable to the cause of advanced education as the man who writes voluminously. The last thirty years would cover the period during which real productive scholarship, as distinguished from instruction, has been at a premium in this country; but this premium may become rather over enlarged, to the extent that every college man will feel under obligation to publish some kind of a treatise, with the result that a great many things will see the light that ought never to be published.

MR. STRINGHAM: Mr. Hall's remark about research in state universities reminds me that in three departments at the University of California the time of the workers is devoted primarily to scientific research. These are the departments of physiology, astronomy (at the Lick Observatory), and agriculture. Yet it is true that the acceptance of the idea that research is a legitimate function of the state university is recent. The constitution of the state of California, adopted in 1879, affirmed the principle that the public moneys could be used only for primary education, thereby leaving stranded all the then existing high schools of the state. But with delightful inconsistency the legislature and the people voted to incorporate into that constitution the organic act of the state university. It was not until the year 1891 that a new law was passed authorizing local taxation for the maintenance of high schools. From this date on the number of high schools increased rapidly and a few more years sufficed to bring into general acceptance the idea that state moneys can be used for the maintenance of all departments of education, including the highest. The organization

of departments of research has followed in natural course, and the question: Is research work legitimate in a state university? has been answered in the affirmative.

MR. VAN HISE: The same question has come up with us, and we already have attempted one solution and are now trying another. For a long time we thought we might induce students planning to become engineers to devote at least two years to the college of liberal arts before going into technical work and thus secure a six years' course. That attempt failed. We have now attacked the problem in another way. We shall introduce, the coming year, five- and six-year courses in engineering, which distribute liberal studies through a longer time than two years. For five years' work the degree of bachelor of science in engineering will be given. For the six-year course, providing advanced engineering studies, we shall give a professional degree. Students who take the sixth year will be classified as graduate students, and the degrees of electrical engineer, mechanical engineer, and civil engineer will be regarded as higher degrees equivalent in value to the Master's degree. Under the general plan will be given one illustrative course combining studies in commerce and studies in engineering. There is a demand for men who have both technical and business training. If we succeed in the proposed five- and six-year courses we hope to produce for the engineering profession broadly educated men as well as high-grade engineers.

THE CHAIRMAN: I think the point made by Mr. Carver is a very good one. I have in mind two men who are the cause of productive scholarships in others and form extremely efficient members of a faculty, but who do very little themselves so far as actual publication is concerned.

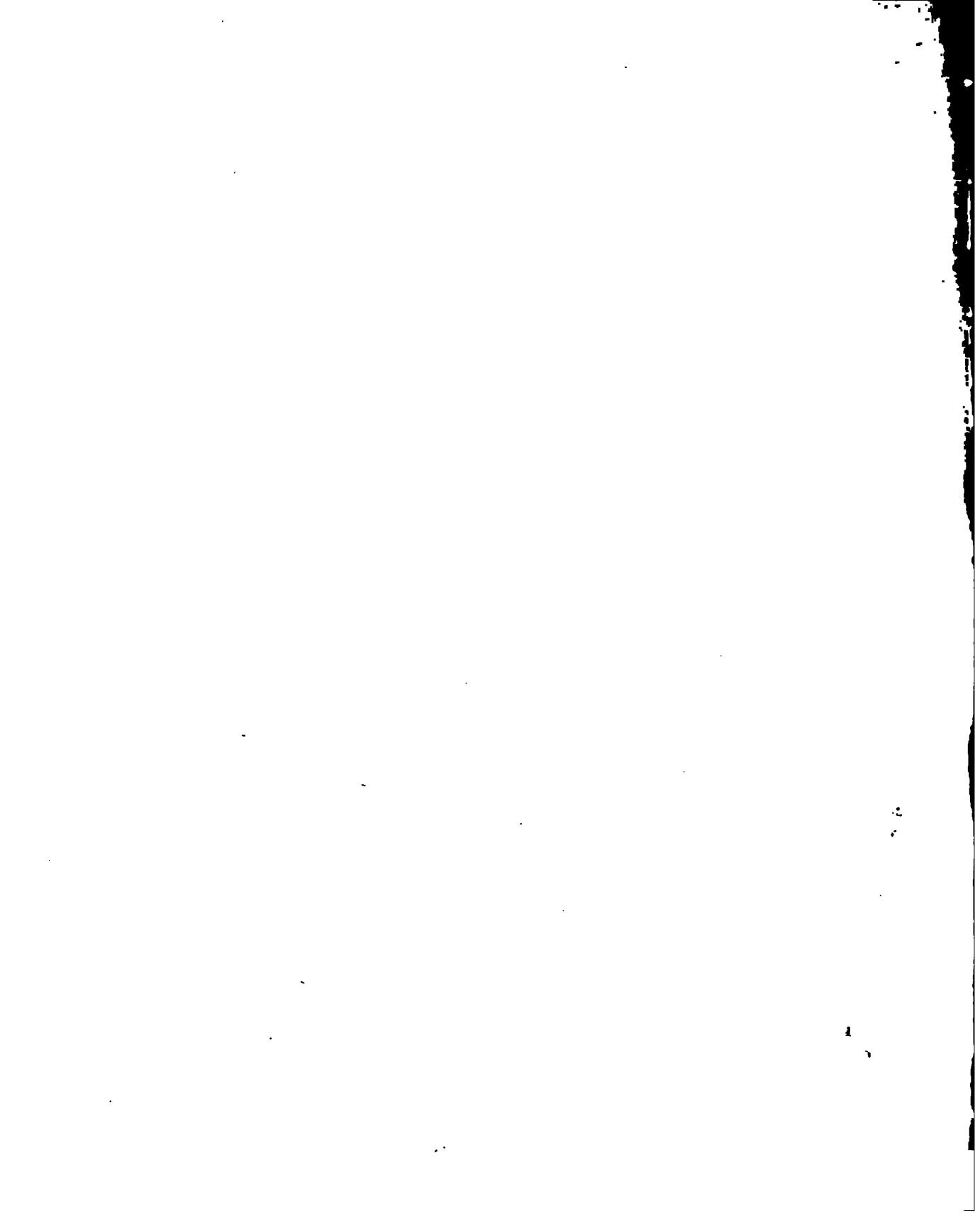
I do not think that the question as to how far it is desirable to relieve from teaching men primarily researchers, is settled. Examples can be given showing that it has in some cases proved disastrous to relieve them, and I am a little afraid of the tendency to relieve men from what may be regarded as the legitimate duties of a professor in order to give them time to make a show. I am not sure that it is for the interests of the man, nor for the interests of his university so to relieve him. He loses the extremely valuable stimulus of the teaching. We run some risk, as I see it, of making too much of the researcher and sacrificing some of his best qualities because we want to get more out of him. I think that is a question at all events that might be discussed at some time. It is hardly pertinent to the subject of the paper under consideration now, but it would be interesting to take it up at some other time.

MR. VAN HISE: I do not dissent from anything Mr. Carver or President Remsen has said in reference to the teacher who is not a productive scholar, although I think that such men should be exceptional. In giving the policy adopted at Wisconsin for the appointment of professors, I had no idea of proposing a general principle. Conditions at Wisconsin being as they are, I regard the policy announced as advisable for that institution at the present time. In reference to requiring instructional work from men who are investigators, in most cases it is well for a man who devotes most of his time to productive work to do also some instructional work. It seems to me that even for the head of a department it is an advantage to give at least one course of elementary lectures which go over his subject broadly.

MR. WEST: I am not sure that what I have to say will specifically refer to the difference between graduate instruction in the state universities, mainly in the West, and the endowed universities, mostly in the East, so much as to what seems to me a common source of difficulty, possibly

a little more sharply accentuated in the state institutions of the West than in the institutions which are free to disregard what the people want. I suppose we all agree with what Mr. Hadley said yesterday, that the business of the university after all is to maintain standards, whether by diffusing or advancing knowledge, and that independent of all learning and fluctuations of popular opinion. I think we have been yielding to one or two fallacies, and that one of them, being merely the excess of a good thing, is the idea that every professor must be a producer, more or less irrespective of the value of what he produces. And the flood of publications, say in some subsection of the vast field of biology, is swamping men—it is engulfing them. The men who can read and criticise and review what has been turned out in the year are very rare; in fact it is almost impossible. Germany is producing in one year more bound volumes than there are in Greek and Latin literature. And yet the impulse to produce, produce, produce—a splendid thing when a man cannot help doing a great thing—is an awful thing when second- and third-rate men are being told to produce what they can produce—that is, merely second- and third-rate stuff. What is disappearing is another form of productive work, the producing of the strong individual scholar by the close touch of the great master; that may be done by a man who is himself a well of knowledge for everybody and yet not a writer, not a recorder of what he thinks. Our graduate schools are far too largely attended in many ways, and by men of a personality not equal to the run of the better men in the Senior class. If we are to get the real standardizing of knowledge, it has got to be by concentrating on the producing of the men, rather than on the producing of something by men in the way of treatises. The conclusions of the erratic man or the too-visionary man, no matter what his training, will always remain tainted with something visionary or erratic, and it is getting at those few strong personalities that is going to cure the difficulty in our graduate schools.

I venture to think that that trouble is greater in the state universities, as these must respond not primarily to the standards of knowledge set by the educational authorities, but to those as modified from time to time by the wishes of the community which it serves, and serves very nobly.



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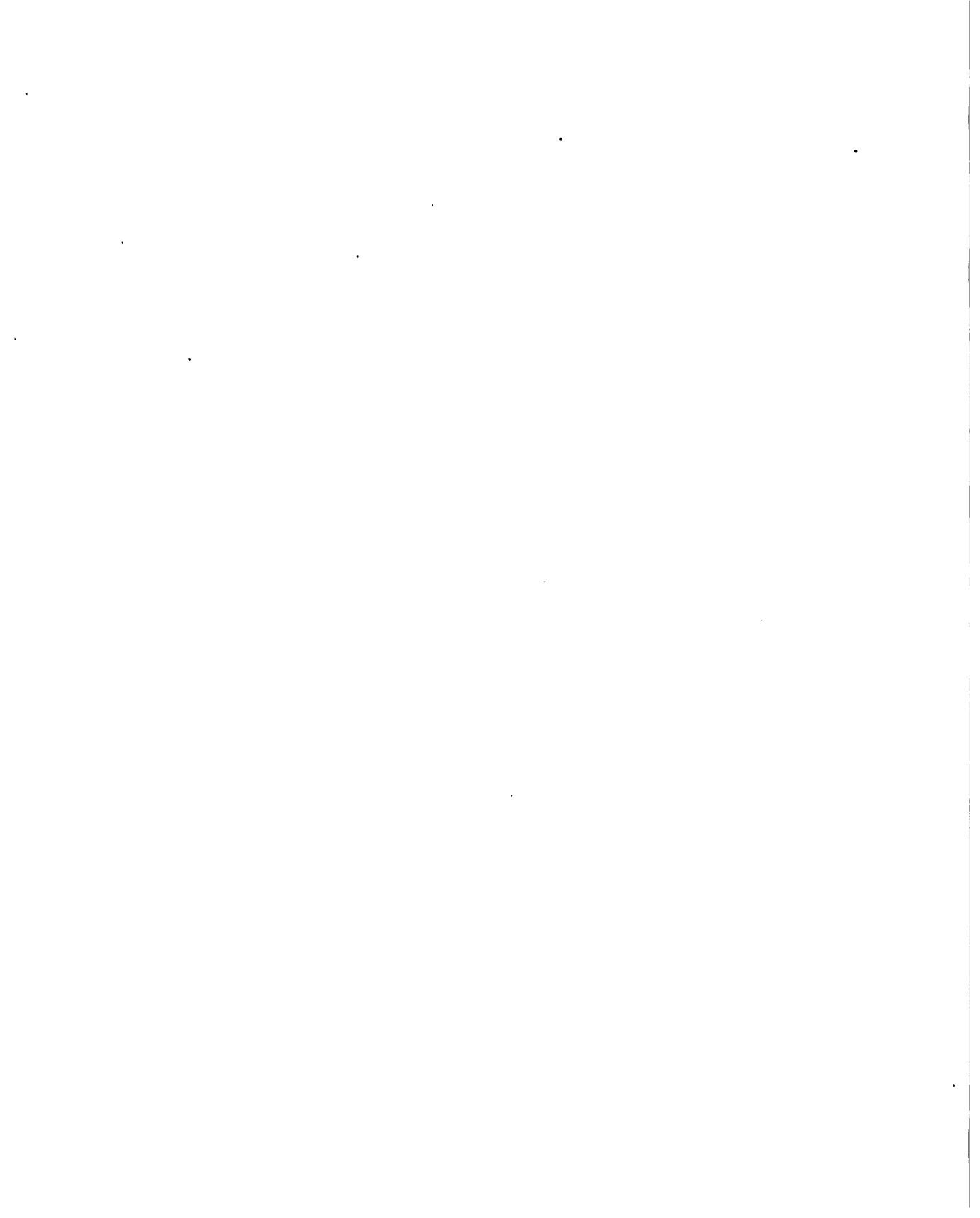
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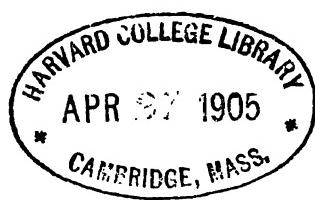


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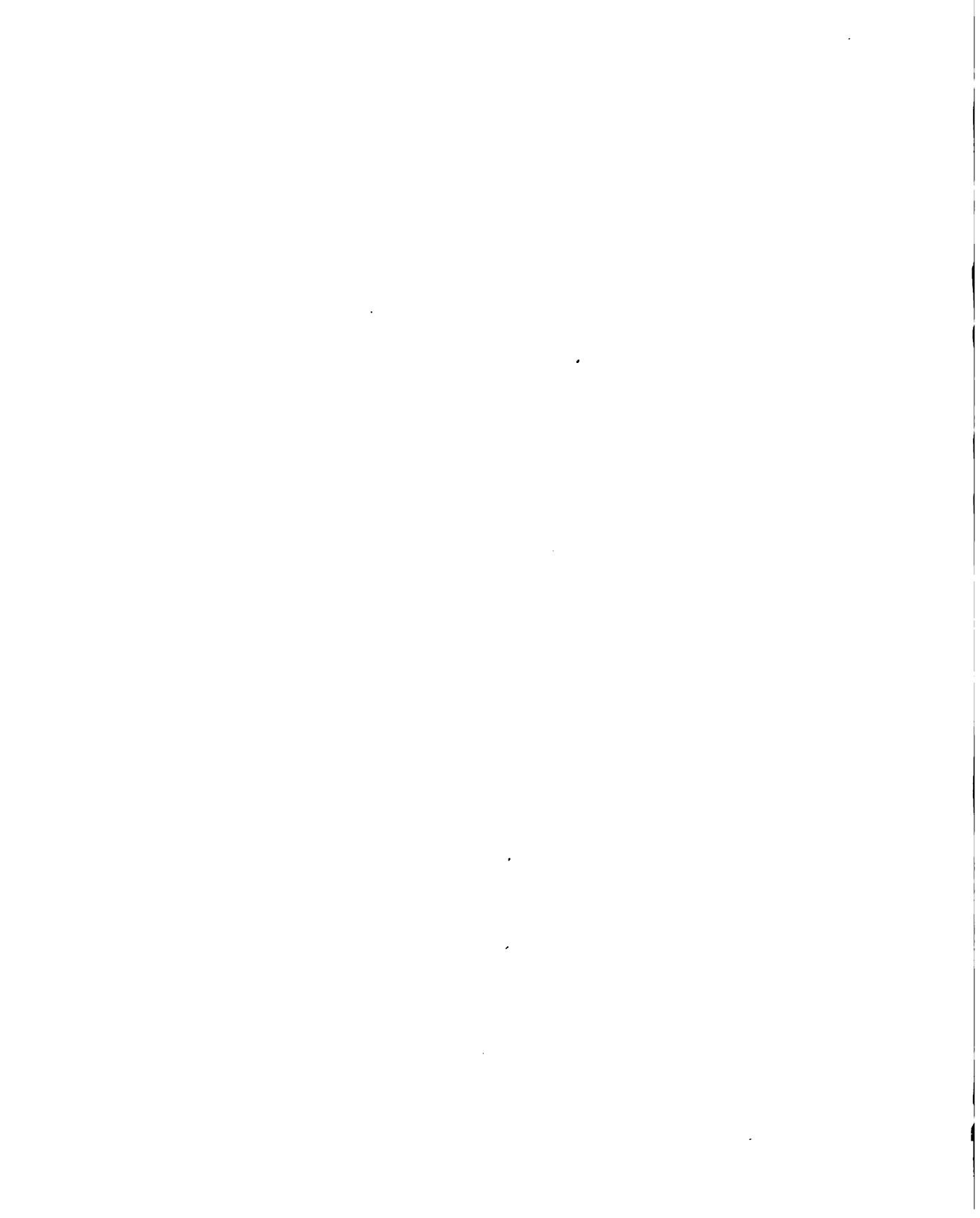
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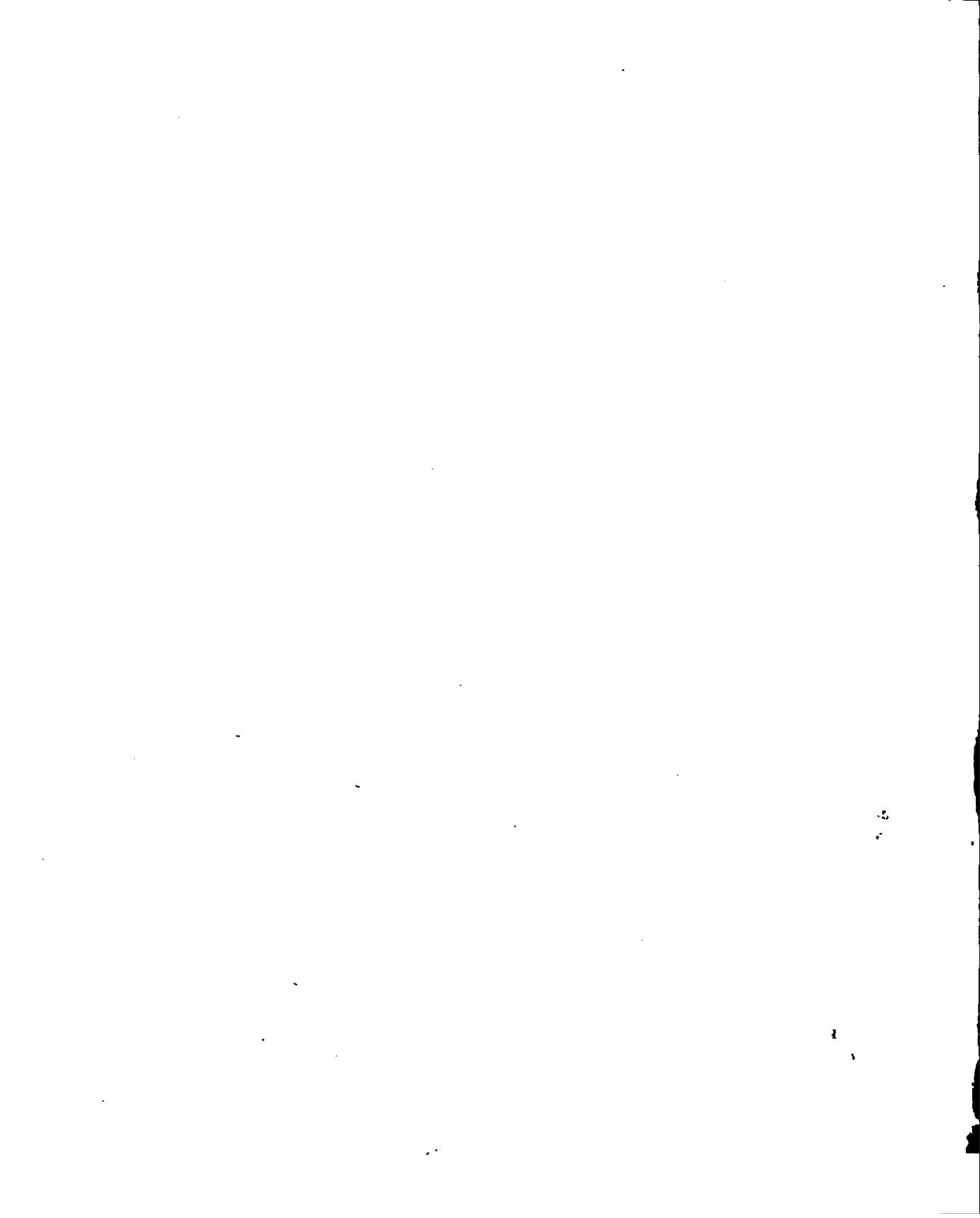
UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania

PRINCETON UNIVERSITY,
Princeton, New Jersey

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Madison, Wisconsin

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New Haven, Connecticut

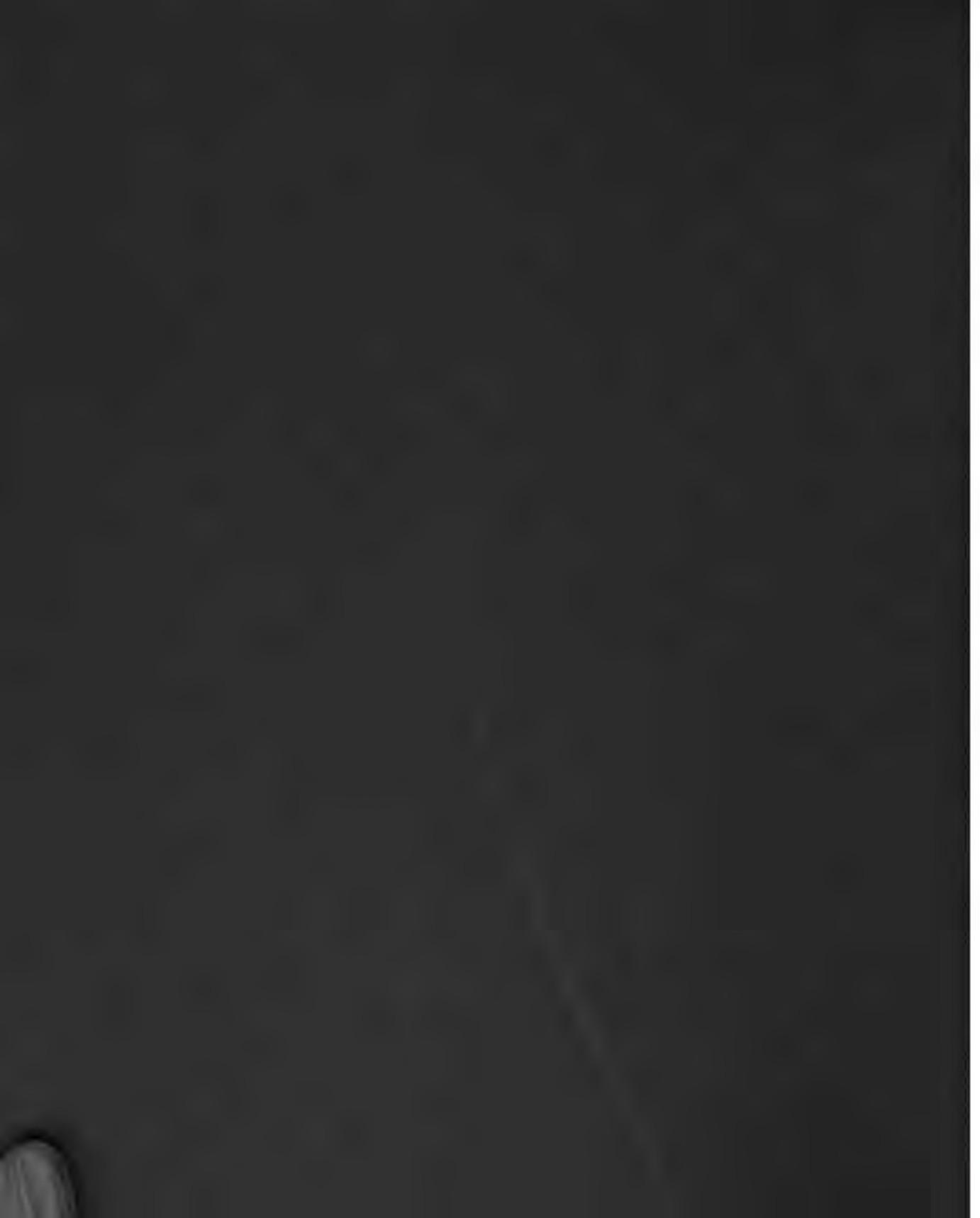


*The ASSOCIATION
OF AMERICAN
UNIVERSITIES*

*The Sixth
Annual Conference*

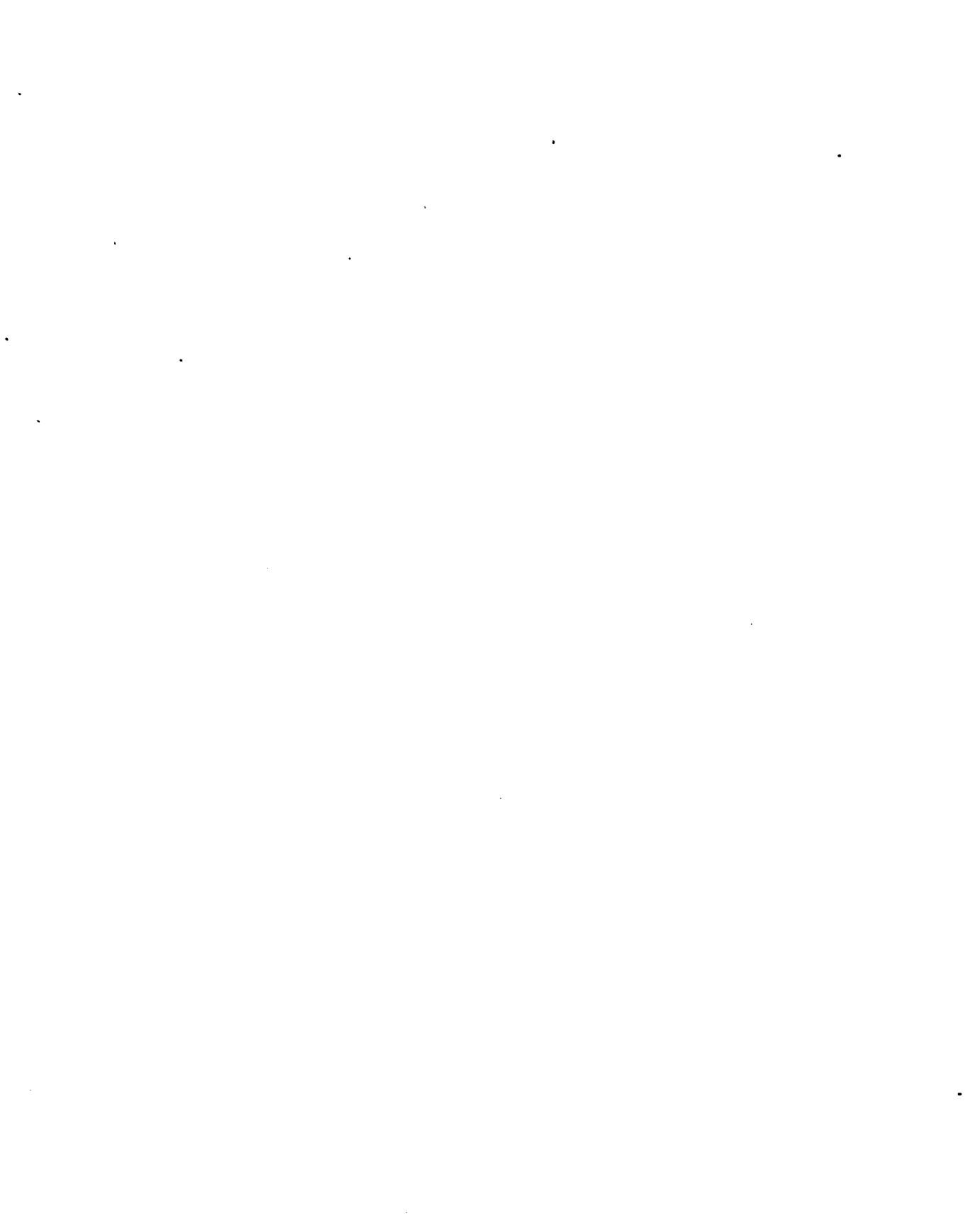
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H. H. K. LEE AND J. T. MOORE
University of Wisconsin, Milwaukee, WI 53211



*THE ASSOCIATION
OF
AMERICAN UNIVERSITIES*

1904—1905

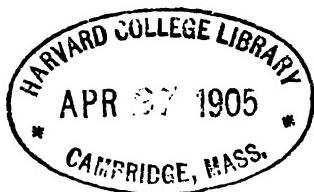


The Association of American Universities

JOURNAL
OF
PROCEEDINGS AND ADDRESSES
OF THE
SIXTH ANNUAL CONFERENCE

HELD IN
BALTIMORE
JANUARY 12-14
1905

1905
PUBLISHED BY THE ASSOCIATION



Class Association

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MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES

UNIVERSITY OF CALIFORNIA,
Berkeley, California

CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C.

THE UNIVERSITY OF CHICAGO,
Chicago, Illinois

CLARK UNIVERSITY,
Worcester, Massachusetts

COLUMBIA UNIVERSITY,
New York, N. Y.

CORNELL UNIVERSITY,
Ithaca, N. Y.

HARVARD UNIVERSITY,
Cambridge, Massachusetts

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Maryland

THE LELAND STANFORD JUNIOR UNIVERSITY,
Palo Alto, California

UNIVERSITY OF MICHIGAN,
Ann Arbor, Michigan

UNIVERSITY OF PENNSYLVANIA,
Philadelphia, Pennsylvania

PRINCETON UNIVERSITY,
Princeton, New Jersey

UNIVERSITY OF VIRGINIA,
Charlottesville, Virginia

UNIVERSITY OF WISCONSIN,
Madison, Wisconsin

YALE UNIVERSITY,
New Haven, Connecticut

CALENDAR OF CONFERENCES

- FIRST ANNUAL CONFERENCE (organization),
Chicago, February 27, 28, 1900
- SECOND ANNUAL CONFERENCE,
Chicago, February 26-28, 1901
- THIRD ANNUAL CONFERENCE,
Chicago, February 25-27, 1902
- FOURTH ANNUAL CONFERENCE,
New York, December 29-31, 1902
- FIFTH ANNUAL CONFERENCE,
New Haven, February 18-20, 1904
- SIXTH ANNUAL CONFERENCE,
Baltimore, January 12-14, 1905
-

OFFICERS

1905-1906

President—The representative of the University of Wisconsin.

Vice-President—The representative of Cornell University.

Secretary—The representative of Columbia University.

Additional members of the *Executive Committee*—The representative of Princeton University;
the representative of Leland Stanford Junior University.

THE SIXTH ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

THURSDAY, JANUARY 12, 1905

MINUTES

The delegates were received by the representatives of the Johns Hopkins University, at 1 P. M., in McCoy Hall, and were the guests of the University at luncheon, at 1:15 o'clock

FIRST SESSION

The First Session was called to order in McCoy Hall, at 2:00 P. M., with Mr. Remsen of the Johns Hopkins University, in the chair.

The following representatives of the Universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Irving Stringham, Mr. A. O. Leuschner

UNIVERSITY OF CHICAGO—Mr. William R. Harper, Mr. Albion W. Small

CLARK UNIVERSITY—Mr. G. Stanley Hall

COLUMBIA UNIVERSITY—Mr. Munroe Smith, Mr. William H. Carpenter, Mr. Henry M. Howe, Mr. F. P. Keppel

CORNELL UNIVERSITY—Mr. Thomas F. Crane

HARVARD UNIVERSITY—Mr. James Barr Ames, Mr. Thomas N. Carver

JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen, Mr. B. L. Gildersleeve, Mr. William Henry Welch

UNIVERSITY OF MICHIGAN—Mr. A. C. McLaughlin

UNIVERSITY OF PENNSYLVANIA—Mr. Josiah H. Penniman, Mr. J. C. Rolfe, Mr. Clarence G. Child

PRINCETON UNIVERSITY—Mr. Andrew F. West, Mr. W. M. Daniels

LELAND STANFORD JUNIOR UNIVERSITY—Mr. Ellwood P. Cubberley

UNIVERSITY OF VIRGINIA—Mr. James Morris Page

UNIVERSITY OF WISCONSIN—Mr. Charles R. Van Hise

The minutes of the preceding Conference were approved as printed.

The Executive Committee presented its report with regard to the resolutions referred to it at the Fifth Annual Conference. Upon motion, the REPORT of the Executive Committee, amended to read as follows, was accepted :

At the Fifth Annual Conference of the Association of American Universities held at New Haven, February 18-20, 1904, the following resolutions were adopted:

The Association of American Universities

1. *Resolved*, That the question of holding future meetings of the Association annually or biennially be referred to the Executive Committee.

2. *Resolved*, That the Executive Committee be requested to consider the whole question of membership, including the purposes of this Association, and to make a report at the opening session of the next meeting of the Association.

The Executive Committee has given careful consideration to the questions involved in the second resolution, and has endeavored to obtain through correspondence the opinions of the several members of the Association upon them. The following report embodies the opinions of a majority of the members:

The Executive Committee would recommend:

1. That the Association deal with advanced instruction as a whole, as contrasted with collegiate instruction.

2. The Committee recognizes that while there is a general sentiment that a considerable increase in membership would lessen the efficiency of the organization, and while about one-half the members of the Association feel that the present membership is adequate for a discussion of the problems in which the Association is interested, there is still a strong sentiment that other institutions should from time to time be elected to membership in the organization. No formal declaration of principles as to eligibility other than the announced purposes of the organization, and no definite numerical limitation as to membership seem to be necessary.

The Executive Committee does not feel that it would be advisable to change the name of the organization.

Respectfully submitted,

IRA REMSEN

IRVING STRINGHAM

WM. H. CARPENTER

JAMES BARR AMES

The recommendation of the Executive Committee that for the future the meetings of the Association be held biennially, was laid on the table.

The Secretary announced the receipt of the following communication from the Faculty of Philosophy of the University of Berlin:

BERLIN, Juli 1904.

Die Philosophische Fakultät der Friedrich-Wilhelms-Universität beeht sich, die nachfolgenden von ihr am 18. Juli d. J. beschlossenen

AUSFÜHRUNGSBESTIMMUNGEN ZUR PROMOTIONSORDNUNG

zur Kenntnis zu bringen:

1. Die Fakultät erkennt jeden an einer amerikanischen Universität erworbenen Bachelor-Grad (B.A., B.Sc., u. a.) als Äquivalent eines deutschen Maturitätszeugnisses an.

2. Auf das vorgeschriebene Triennium wird die Fakultät bei der Befürwortung des erforderlichen Ministerialdispenses in der Regel nur diejenigen amerikanischen Studienjahre in Anrechnung bringen, welche nach Erwerb des Bachelor-Grades an einer derjenigen Universitäten zuge-

bracht sind, die der Association of American Universities angehören. Mindestens drei Semester muss der Kandidat jedoch an einer deutschen Universität studiert haben.

Der Association of American Universities gehören zur Zeit folgende 14 Universitäten an:

Harvard University—Cambridge bei Boston, Massachusetts

Clark U.—Worcester, Massachusetts

Yale U.—New Haven, Connecticut

Columbia U.—New York city

Cornell U.—Ithaca, New York

Princeton U.—Princeton, New Jersey

U. of Pennsylvania—Philadelphia, Pennsylvania

The Johns Hopkins U.—Baltimore, Maryland

Catholic U. of America—Washington, D. C.

U. of Michigan—Ann Arbor, Michigan

The U. of Chicago—Chicago, Illinois

U. of Wisconsin—Madison, Wisconsin

U. of California—Berkeley, California

The Leland Stanford Junior U.—Palo Alto, California¹

Upon motion, it was

Resolved, That the Secretary be instructed to inform the Faculty of Philosophy of the University of Berlin annually of the action taken at the Conferences of the Association of American Universities.

The Secretary announced informally that the Dutch Government had taken official action, promulgated by Royal Order of February 12, 1904, to the effect that hereafter all American students holding the degree of Bachelor of Arts from one of the institutions included in the Association of American Universities shall be admitted to the Dutch universities under all Faculties without examination.

Upon motion, the Chair was authorized to appoint a Nominating Committee.

Mr. Leuschner, of the University of California, and Mr. Keppel, of Columbia University, were requested to prepare reports of the meetings for the press.

¹ TRANSLATION.—The Faculty of Philosophy of the Friedrich-Wilhelms-Universität (Berlin) have the honor to notify you of the following regulations concerning candidacy for the Doctor's degree, adopted on July 18, 1904:

1. The Faculty recognizes every baccalaureate degree (A.B., B.Sc., etc.) acquired at an American University as the equivalent of the German *testimonium maturitatis*.

2. In order to have graduate work pursued at an American university credited by this Faculty, upon proper approval of the ministry, toward the three years of study prescribed by this University for the degree of doctor of philosophy the candidate must have taken his graduate work at one of the institutions represented in the Association of American Universities. The candidate must, however, have been in residence at a German university for at least three semesters.

The Association of American Universities is at present composed of the following fourteen institutions:

....

The Association of American Universities

The Chairman announced that the privileges of the University Club of Baltimore had been extended to the delegates.

The session adjourned at 4 P. M.

In the evening the delegates were guests of Mr. Theodore Marburg, Trustee of the Johns Hopkins University, at a reception given at his residence, No. 14 Mt. Vernon Place.

SECOND DAY'S PROCEEDINGS

FRIDAY, JANUARY 13, 1905

MINUTES

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held on Friday, January 13, at 9:45 A. M., in President Remsen's office.

There were present the following members of the Executive Committee:

For JOHNS HOPKINS UNIVERSITY—Mr. Remsen
 For COLUMBIA UNIVERSITY—Mr. Carpenter and Mr. Keppel
 For HARVARD UNIVERSITY—Mr. Ames
 For UNIVERSITY OF CALIFORNIA—Mr. Stringham
 For CLARK UNIVERSITY—Mr. Hall

The Secretary presented the following FINANCIAL REPORT, which upon motion, was approved:

Receipts:

From 15 assessments of \$40 each for the institutions represented in the Association	-	\$600.00
Balance on hand	-	56.39

Total	-	\$656.39
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Expenditures:

For printing circular of Executive Committee	-	-	-	\$ 8.25
For stenographic service at Fifth Annual Conference	-	-	-	69.40
For telegrams, postage, and sundries	-	-	-	8.11
For printing 800 copies of Proceedings of Fifth Annual Conference	-	-	-	252.57
For express charges, receipt and distribution to 15 institutions of above	-	-	-	
Proceedings	-	-	-	13.60
For exchange on cheques	-	-	-	.48
Balance on hand January 3, 1905	-	-	-	\$303.98

Upon motion, it was

Resolved, To recommend to the Association that each member be assessed \$25.00 to provide for the expenses of the coming year.

The Secretary was authorized to increase the edition of the Reports of the Conference to 1,000, if it should be desirable to do so.

Upon motion, it was

Resolved, To recommend to the Association that the time for the next meeting be between January 10, and January 25, 1906.

Upon motion, it was

Resolved, To recommend to the Association that the President of the Carnegie Institution be invited to be present at all future meetings of the Association.

Upon motion, it was

Resolved, That the following report be presented to the Association with regard to certain institutions nominated for membership at the Fifth Annual Conference:

The Executive Committee does not think it advisable at this time to recommend any additional institutions for membership in the Association.

The Committee adjourned at 10:15 A. M.

SECOND SESSION

The session was called to order, at 10:30 A. M., with Mr. Remsen in the chair.

The following delegates were present in addition to those at the preceding session:

For the CATHOLIC UNIVERSITY OF AMERICA—Mr. Maurice Francis Egan, Edward A. Pace.

For YALE UNIVERSITY—Mr. Arthur T. Hadley.

Mr. Henry M. Howe, on behalf of Columbia University, presented a PAPER on "The Organization of Higher Technical Education."

The following delegates took part in the DISCUSSION of the paper: Mr. Remsen, Mr. Hadley, Mr. Howe, Mr. Van Hise, Mr. Stringham, Mr. Penniman, Mr. Hall, Mr. Crane, Mr. Leuschner, Mr. Carver.

The financial report of the Executive Committee was accepted, and the several recommendations of the Committee to the Association and the report as to membership were presented, and each, upon motion, was adopted. (See pp. 10-13.)

The names of certain institutions were presented to be considered by the Executive Committee under the rules.

The Chairman announced as the Nominating Committee: Mr. Harper, Mr. Ames, and Mr. Carpenter.

A general discussion as to the time and place of the next Conference was held. Invita-

tions to the Association were extended on behalf of the University of Wisconsin, Princeton University, University of California, University of Chicago, Harvard University, and Leland Stanford Junior University.

Upon motion, it was

Resolved, That the time and place of holding the next conference be left to the new Executive Committee, with the expression of opinion that it would be well, if practicable, to hold the meeting farther west than the Atlantic seaboard.

The session adjourned at 12:30 P. M., after which the delegates were the guests of the President of Johns Hopkins University and Mrs. Remsen at luncheon, at No. 214 West Monument Street.

THIRD SESSION

The session was called to order at 2:30 P. M. by Mr. Remsen.

Mr. Small, on behalf of the University of Chicago, and Mr. Hall, on behalf of Clark University, presented PAPERS on the following subject: "Construction in Graduate Schools."

The following delegates took part in the Discussion: Mr. West, Mr. Munroe Smith, Mr. Page, Mr. Crane, Mr. Harper, Mr. Van Hise, Mr. Remsen, Mr. Carver, Mr. Hadley, Mr. Penniman, Mr. Small, Mr. Hall, Mr. Stringham, and Mr. Cubberley.

The Committee on Nominations reported as follows:

For *President*—A representative of the University of Wisconsin.

For *Vice-President*—A representative of Cornell University.

For Members at Large of the *Executive Committee*—Leland Stanford Junior University; Princeton University.

The nominations of the committee were accepted and the officers nominated were declared elected.

The Chairman requested that suggestions from the delegates as to suitable topics for discussion at the forthcoming conference of the Association be handed to the Secretary.

The session adjourned at 5 P. M.

The delegates were the guests of the President and Trustees of the Johns Hopkins University at dinner, at 7:30 P. M., at the Maryland Club.

THIRD DAY'S PROCEEDINGS

SATURDAY, JANUARY 14, 1905

MINUTES

FOURTH SESSION

The Fourth Session was called to order by Mr. Remsen at 10:30 A. M.

Mr. Van Hise, on behalf of the University of Wisconsin, and Mr. Page, on behalf of the University of Virginia, presented PAPERS on the following subject: "The Opportunities for Higher Instruction and Research in State Universities."

The following delegates took part in the DISCUSSION: Mr. Hall, Mr. Van Hise, Mr. Carver, Mr. West, Mr. Stringham, Mr. Remsen.

Upon motion, it was

Resolved, That the Association of American Universities places on record its grateful acknowledgment of the comfortable arrangements and abundant social enjoyments provided at this session of the Association by the Johns Hopkins University, The University Club, The Maryland Club, and the many hospitable homes of Baltimore.

The motion was adopted in a rising vote.

Upon motion, the session adjourned at 12:35 P. M. *sine die*.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held at the Johns Hopkins University at 12:40 P. M., January 14.

The following representatives were present:

For University of Wisconsin, *President*—Mr. Van Hise

For Cornell University, *Vice-President*, Mr. Crane

For Columbia University, *Secretary*—Mr. Carpenter and Mr. Keppel

For Princeton University—Mr. West

Upon motion, it was

Resolved, That the matters referred by the Association to the Executive Committee be treated in the usual manner by correspondence.

The meeting adjourned at 12:50.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE SIXTH ANNUAL CONFERENCE

SECOND SESSION

THE ORGANIZATION OF HIGHER TECHNICAL EDUCATION

PAPER PRESENTED BY HENRY M. HOWE, OF COLUMBIA UNIVERSITY

Will technical schools serve the interests of the community better if they are parts of great universities or if they are isolated institutions? Is association or isolation more to the public good?

Unfortunately these questions do not present themselves thus sharp-cut to the majority of those who have directly or indirectly a voice in the matter, such as the great body of alumni, who have given little close thought to educational questions since graduation, and probably little before. If they are the electors of the overseers, trustees, or corporation of their Alma Mater, their opinion has great and not very indirect force; even if they are not the electors their opinion is by no means to be neglected.

Is a definite plan of association proposed? The majority of those interested at once ask, not "Is this to the public good?" but "How will it affect my beloved Alma Mater? Will she be eclipsed, overshadowed? Will she lose her identity, her individuality? I loved her in my youth, in those golden days when affections struck their roots deep, and I loved her as she was, and because she was what she was. I would have her grow in size and above all in glory; but I would have her always her own dear self, with her own characteristics." They are not so extreme as the lover who sees every blemish of his Beatrice as an immaculate charm, the Titania to whom Nick Bottom is an Adonis; not so extreme, but in them in a minor degree is this same blessed distorting sentiment. That this strong people—this segregate formed by that great selecting force which has brought to a new, free, and rich land the more energetic, courageous, and active members of millions of European households, leaving as a residuum the less energetic, those of less enterprise—that this people for all its strength and dash is still eminently a people of sentiment, is its greatest glory. But noble and welcome as sentiment is when applied to human beings,

it is often most confusing when applied to inanimate objects and to abstractions. Though much of the strength of the free-silver craze was due to a wish, often subconscious, to evade full payment of just debts and to other sordid motives, it yet seemed in no small part due to a befogged but chivalrous wish to do something for an oppressed and downtrodden metal, to a fuddled cherishing of the time-hallowed dollar of our fathers. We are for the under dog.

Alumni, in approaching this question, should make allowance for a bias to which trustees and fellow-alumni of prominence in the affairs of their Alma Mater are subject. Even the most conscientious of these, he even at once so unselfish and so judicial that dread of loss of his own influence or prestige has no weight with him, yet, being human, is subject to bias through belief that he and his present associates, in view of their long acquaintance with the work, can manage their institution more wisely, more to the public good, than any other body of men. But no one of us is a competent judge of his own superiority.

I may be captious if I complain of the blindness of your affection for your Alma Mater when it leads you to endow gymnasium, scholarship, or chair; I certainly find it hard to turn you when you will see her as a personal being, to be loved and cherished as such, and not as an inanimate thing, almost an abstraction, a means and only a means to the end of supplying the community with trained youths. You see and touch her buildings, her ground, her teachers, her students, her trustees; you hear her traditions; you recognize her influence; but you can neither see, hear, feel, nor touch her very self. Has she a very self? Where and what is it? Is it a spirit? If it is, in what body does it reside, and what single act has it ever done, as distinguished from those of its officers? Does this spirit reside in its charter? Yes, as much as yours does in your certificate of baptism.

Look at it fairly. Certain benevolent men wish to facilitate education; they love their community, which, mark you, is composed of human beings, of real flesh and blood, and is no abstraction, no means to an end. They would better this community by aiding it to train its youths. They give to that end; to that end certain wise men of affairs, trustees, or overseers, give freely of their time and thought to directing the use of this money for this same end. They engage a great administrator and scholar to work for them for this same end; with his counsel they engage many teachers, always to this same end.

Dormitories, lecture-rooms, and laboratories spring up; youths come, are trained, pass on to usefulness, and are succeeded by others.

Here is an institution of learning: what are its parts? First, the purpose, cause, or end of training youth for the benefit of the community, underlying, encompassing, dominating every other part. Toward this the deepest devotion is due. Second, human beings, founders, trustees, teachers, alumni, students, toward all of whom sentiment is reasonable, whose rights are to be respected; all are supposed either to be working for this end, the training of youth, or to be the product of that training. Third, buildings, trees, and grounds, inanimate things, yet after all, things toward which sentiment is as

natural as toward the inanimate home in which we have lived, the rackets, clubs, and guns of our pastimes. Fourth, an abstract mechanism, an organization, a scheme through which founders, trustees, teachers, students, and perhaps alumni, are enabled to work together effectively toward this same end, bettering the community through the training of youth. But how far is sentiment reasonable toward such a mechanism, apart from its work? A concrete mechanism, a locomotive of Stephenson's, because of its concreteness you may preserve unchanged as a monument to its inventor, or as an instructive curiosity; but an abstract mechanism, a procedure, formula, or constitution you do not hesitate to amend, erase, or combine with another, if this is to the good of its beneficiaries, in the present case, the community.

Is the whole greater than the sum of its parts? What other thing is there in this institution besides its purpose, its men, its property, and its organization? Its traditions? But are not these simply manifestations or products of the interaction of these essential parts, purpose, men, property, and mechanism? And after all do they not exist solely that they may serve the underlying purpose of training, and are they not to be modified, if through modification they will serve that purpose better? Let us not dispute as to names if we agree as to facts.

If I am right, what weight should we assign to the effect of a proposed co-operation, affiliation, or association, on each of these several parts of an institution?

To its effect on the mechanism, the organization, the constitution, sharply distinguished from the men who work in it, or if you prefer who are part of it, absolutely no weight. Anything may be a fetish; but reasonable consideration of a mechanism asks only how well it effects its purpose. It exists not for itself, but solely for its purpose, which in this case is to benefit the community.

The effect on the property, real and personal, is likely to be insignificant; we may pass it by.

The weight to be attached to the effect on the several classes of men must be found by considering these classes separately.

The founders and benefactors? Let us not dishonor them by assuming that they gave in vanity to perpetuate their names, which quickly become mere sounds; or that in vanity and selfishness they could wish to impose their will, their conception, their policy, the weight of their dead hands, on their trustees, to hamper them in the wise conduct of their trust in the clearer light of later days, when experience and experiment shall have unraveled the early tangles, when opportunities of greater usefulness shall have arisen. Let us do as we would be done by, and assume that those generous givers would generously, nay reasonably and naturally, wish their gifts to be used for carrying out the purpose for which they gave them, the bettering of the community through the training of youths in the way which shall at any later time be found the wisest.

If, then, founders and benefactors had no strong wish other than this benefit of the community, in considering them we have but to consider this benefit.

The trustees? We may assume that the generous gift of their time and counsel springs from like motive with that of the founders and benefactors; their cases are alike.

The young alumnus? Because his diploma is valuable evidence of his merit, to discredit it would be unjust to him. But its value rightly rests upon the standing of its issuer at the time of issue, and it is hard to see how this standing is to be materially affected in the few years in which the diploma is of use, by any co-operation or even merging which is truly to the public good. After a very few years the alumnus is rightly judged almost solely by his later achievements, and not by his diploma. We ask always for a servant's recommendation from his late employers, not from those of years ago. The case of the older alumni, those grown sons, should be like that of the founders, benefactors, and trustees.

The teachers? If the plan proposed is wise, the best teachers will find through it a wider field of usefulness. Of the others a certain proportion would through association become superfluous. But this superfluity would quickly disappear through the usual processes of promotion, transfer to other institutions, and retirement, and to provide temporarily for it should not tax the ingenuity of the president.

If I am right then, in considering any specific plan its effect on the public welfare should receive almost our whole attention.

But even if you will not hold with me in detail, you may in effect. If you attach great importance to retention of individuality, consider well the details, and ask whether they really tend to efface it. Co-operation and association do not necessarily imply loss of individuality or essential change of character. A member of a firm or of a family is indeed influenced by his associates, but loses neither his individuality nor his inborn character. The alumni of the schools of Applied Science of Columbia have their own organization distinct from that of the Columbia College graduates. It is said that changing the connection between Columbia University and its College of Physicians and Surgeons from a nominal to a close working union, while it has aided the evolution of the character of this branch, yet has not sensibly lessened either its individuality, or the *esprit de corps* of its students and graduates. As between peoples the intimacy of association varies widely, from the simple zollverein, through unions such as that of our own country, to complete effacement like that of Carthage, so it may be with learned institutions. Has Massachusetts or New York suffered loss of character or individuality through its union with the other states? Would Cuba? Has the eclipsing or overshadowing of Rhode Island been increased by the union?

Do not assume that because association might conceivably efface one of the parties, it necessarily must, but judge each case on its merits. What do you call him who flies blindly from the path of greater usefulness, yes and greater glory, fearing a lion, without stopping to see whether the beast which his fears picture really exists? Which attitude will you take: will you from prejudice, dislike, resentment, or other cause seek reasons against association; or will you ask how best it may be so framed that, while giving its

great promised advantages, it may not destroy the individuality which you prize? Will you seek the new while safeguarding the old? Will you not say

“Build thee more stately mansions, O my” school?

May not schools

“Rise on stepping stones
Of their dead selves to higher things?”

Returning to our first question, Should technical schools serve the public welfare better if they are parts of great universities, or if they are isolated institutions?

Let us assume that the university in question deserves its name, having first, a college or academic department and a department of pure science, and second, other important departments, such as schools of law and medicine, together with advanced instruction in many fields.

First, let us consider the interaction of the teachers. The practice of the arts taught in technical schools, arts with a scientific basis but still arts, is more nakedly for money-making than that of the other professional arts. Medicine heals and raises, law protects the oppressed, dispenses both justice and wisdom from the bench. Even as the servant of finance it has to do rather with the protection and the transfer of wealth already existing than with the creation of new wealth, with the fruits of industry rather than with their growth.

But the technical man is always occupied with questions of profit and cost, of making money for his employer, or of building as cheaply as his standard of quality will permit. The merit of every plan is measured in dollars, be it mining and smelting, manufacturing, transportation, or agriculture. The subject must be taught from this standpoint. Our graduates must be efficient money-makers; but it is still more important for the community that they should be liberal citizens. As the work makes for things earthy, so is it the more our duty to anticipate and offset this tendency, and to strive to give generous and wide views. I charge my students to read poetry, hear good music, see works of art; so will they become better metallurgists, for nine-tenths of their work will have to do with men, and only one-tenth with metals and mechanisms.

Surely it is for the good of the community that the technical teachers should have the softening and broadening influence of contact and work with teachers of the humanities and of pure science, with men to whom the ever-present money question is of secondary importance, to whom beauty is more and money less; for so will they in turn influence their students more broadly and humanly; so will their light be whiter and their precepts and example nobler.

Conversely, it is for the good of the public that the teachers of pure science, and more particularly those of the humanities, should in turn be broadened by contact with the teachers of the technical school. What I gain from another, be he broad or narrow, broadens me. The scholar who, as Dr. Van Dyke says, passes “from the class to the instructor’s

chair, and from that to the professorial cathedra, and so along the spiral, bounded ever by the same curve and steadily narrowed inward" may be an extreme case; and so may the mathematical snob who hopes that mathematics may lack usefulness, a man as narrow as he who talks of art for art's sake, as if anything were for itself and not for the uplifting of man. Extreme though these cases are, it is in the direction of scholasticism, or professorialism—I hardly find the right word—that the teachers of the humanities and pure science as a class twist. This is unfortunate because it turns them the farther from their students, whose natural twist is in the opposite direction. In youth our god is Hercules; we are of hot blood and high spirits; we are openly material; we boast of being "arrivists." To us the professor is dry, snuffy, not of flesh and blood like ours; his interests are not ours. We are not in touch with him, though unconsciously we need his touch so deeply. Our football-loving and rather brutal race especially must see to it that the refining and softening influence of these teachers on our youths is not weakened; for clean and sterling as our qualities are, even they must have their seamy side.

Now these teachers should have their twist toward scholasticism and away from their students lessened by contact with the technical teachers, especially if, as in the schools of law and medicine, these are in part chosen from the active practitioners. Such contact, with interchange of views, with readjustment of standpoint, occurs not so much at faculty meetings as at those of committees, at conferences over cases in which both sets are interested, and at the lunch-table. The channels through which these influences pour upon us are many, even though we may not without careful thought enumerate them, as I write quickly and surely with my typewriter, though when I look away I cannot tell you where a single key lies. A word of comment, a smile, a glance, a shrug, shows me even my own specialty from a new point of view, corrects my astigmatism.

These technical men are generally of broader and closer experience with men as distinguished from boys, with the mature as distinguished from the adolescent human being. They have striven with men in work in which they have been helped only indirectly by their education, in the great tasks which are before men in a field of human endeavor probably more normal than the scholastic one, that of winning wealth from nature, of first surpassing and then directing their fellows; more normal because man is by nature rather a governing, getting, and having animal than a scholastic one. Even as professors they may remain in close contact with the great technical work of the day as consulting or practicing engineers, as directors of industrial companies, and in other ways.

It is to be remembered that these technical teachers, in spite of their contact with affairs on one side, have on the other side close contact with the problems of education. Indeed from the very fact that they have been called to teaching they probably have a natural interest in it; they long to explain and convince. Thus while the distance between their point of view and that of the teachers of the humanities is enough to give new and precious views of the problems of teaching and training, it is not so great as to prevent

these two classes from understanding each other and working in harmony, as experience abundantly proves.

Indeed, no argument is needed to show that every added class of teachers should add to the broadening effect of the environment, and should thus make the attitude of each more just. Each class may indeed attack its problems in its own way; but the solution which one finds should aid the others. The president brings to each faculty some of the experience of each of the others; the university council facilitates the comparison of different solutions of like problems. The professor of mathematics or of Greek may be the one to whom I appeal for light on my problems of molding embryo metallurgists.

Here a word as to the interaction of different classes of students. The serious technical student unexpectedly learns from his fellow of the college of the delights of this or that writer; of the existence of this or that school of philosophy; his interest in things beautiful is awakened; a chat with the student of architecture sets him thinking about the genesis and meaning of logical, finished Doric and soaring, spiritual Gothic. Each student from another department cries "Audi alteram partem; however good and healthy your interests may be, they are only one group out of many." The technical student's horizon is broadened; and truly it needs broadening. According to my observation, narrowness is the chief defect of the isolated technical school.

Like students of the other learned professions the technical students are as a class more earnest, more zealous, than their fellows of the college; they are more mature, and they see more clearly than the college students the bearing of their studies upon their life's work. These contagious qualities, zeal and earnestness, should through intercourse with the technical students be caught in some degree by those of the college students who are not thoroughly immune.

This influence of the technical student should be stronger than that of the other professional ones, because he is nearer than they in age to the college student, and because he meets him much oftener than they in classroom, laboratory, and recreation.

Happily in human intercourse action and reaction need be neither equal nor opposite. The barbarian barbarizes neither colonist nor missionary. The stronger holds to his way, sometimes even the more steadfastly when the benefit of his example to others touches his humanity or his pride. And if the less earnest among the technical students suffer through having the example of the more earnest of their number offset by that of the college students, less earnest as a class, is not this the disadvantage which attends every bringing together of men, and may we not hold that the uplifting action of the stronger will in general far outweigh the down-dragging action of the weaker? In the interaction of depraved men with well-meaning boys the opposite might be true; but here we have not to do with the depraved and vicious. The technical student is stronger because more mature, and because stirred by a stronger motive; if the college student lacks earnestness, it is not because the motive away from it is strong, but because the motive toward it is weak. The upward influence, then, of the more mature and more strongly moved technical student should in

general outweigh greatly the downward influence of the less mature college student, lacking strong motive. Even here, then, the community as a whole should profit by the interaction of students. The college students gain in every respect, and the technical students should gain in breadth more than they lose through any down-leveling of their earnestness, especially if the technical school, at the time of association, has already the momentum which size and established traditions give, and if the influence of the college is diluted by that of allied professional schools, such as those of law and medicine.

But the matter may not be so simple under other conditions, as for instance if, in creating a new technical school, the choice should lie between isolation and association not with a university but with some long-established college which has as yet no professional schools, and thus is itself isolated. Since the broadening effect of association is here at its weakest, while the zeal-chilling influence of the college students is at its strongest, this influence is likely to receive preponderating weight in the minds of those interested in the welfare rather of the projected technical school than of the general public. Such men, and it is in their hands that the decision may rest, would probably oppose association, unless the traditions of the college made for earnestness and scholarship rather than fun and football.

In considering association with a true university, however, though this untoward influence is not to be ignored, it should weigh but lightly against the promised advantages, unless the conditions are unusually adverse.

The counsel and learning of the professors of the school of pure science and of certain professors of the college should directly benefit the technical school associated with the university, by helping to plan and to interpret the researches both of its teachers and of its advanced students. This widens the field of usefulness of the technical school. Its investigators go farther and deeper, and see more clearly. The better-planned research is the better-aimed artillery of science; we throw ourselves on the hinge, not on the solid wall. Wise interpretation of results houses the harvest; false interpretation rots it, making poison where food should be. Remember that it is rather in the great university than in the isolated technical school that eminent professors of mathematics, chemistry, and physics ought to be found, both because the university is their more natural home, and because in it, thanks to the grander scale, their energies, priceless to the community, can be used to better advantage; that is to say, on the most difficult and important work, whether of counsel, direction, or research, instead of being relatively wasted on routine or administrative work which less precious men can do.

As with men, so with instruments. Many of the more costly of these are needed imperatively but intermittently. The technical school readily lends hers to the associated school of pure science, and *vice versa*. So too with books.

And here we reach the general question of economy. Nobody will deny that increase of scale permits greater economy in administration; even if the locomotive were no faster than the stagecoach its economy would insure its use. Nor are we to fear that our present universities have reached the limit of economical human administration; the history of

our great industrial and railroad combinations instructs us here. We need not ask whether their vast scale has increased their benevolence or beneficence; for our immediate purpose their lesson is that the present university scale does not approach the limit of the economical and efficient.

Let the extreme cases make the principle clear. Consider at one end the great university with its five thousand students; at the other an imaginary school in which one student is trained as a mining engineer. The cost to the community of providing for this solitary youth the great staff of teachers of chemistry, physics, mathematics, mining, metallurgy, mineralogy, geology, civil, electrical, and mechanical engineering, and the library, laboratories, and apparatus, would be prohibitory. It is not so much that money would be wasted, but that the energies of these teachers would be wasted. Add twenty-five students of mining engineering to this first, and a great economy results; add two hundred students of various branches of engineering, and still greater economy results; add a school of pure science and then a college, and at each step you have economy. At which stage should economy cease?

Each of these steps widens the field of each of the fundamental and very important divisions of study common to these several parts of a university. A commander-in-chief to plan grand strategy, a commissary-general to plan for food, a surgeon-general to plan for health, division generals to interpret and apply, colonels to prepare details, captains to lead the charge, privates to give and take the shock. The ideal great university fully occupies each general and colonel with work on his own plane, so that his strength is not frittered away on work fit for captains and subalterns. On the staff of the university are men differing widely not only in special acquirement, but in capacity and judgment. The grand scale permits an approach to that ideal planning and division in which the energy of each worker is fully used in work for which he is fitted, and in work fit for him. It enables us to give the investigator more fully to his investigations; to confine the popularizer of knowledge more fully to the immature students, and the deep thinker more fully to the advanced students. What here appeals to us chiefly is, not saving salaries, but better fitting work to worker, enabling each to give the world the most of his best, and most of all fully supplying the generals with generals' work, thus increasing the efficiency of the labor of some of the community's finest and best, and spreading wider the invaluable leavening of that little leaven.

You may ask, "Are not the undivided services of an eminent president more valuable to the isolated technical school than a fraction of the services of even the most illustrious university president?" Each such case must be judged on its merits. The simultaneous consumption and conservation of my cake is no part of my creed. If you dispense with your president and save his salary you cannot keep the equivalent of his full services. But why need you dispense with him? The president of a technical school should retain his efficiency, should indeed accomplish more, if, remaining at the head of his school, he leads

it into association with some sister institution. The act of association need neither expel, enfeeble, nor obstruct him.

To sum up, wisely guided association, while it need neither deprive the technical school of character and individuality, nor injure any of those in interest, should benefit the community, whose welfare here deserves our chief thought, through the broadening interaction of the teachers of pure science and of the college, representing scholarship and culture, on one hand, and the technical teachers, with their closer contact with active life, on the other hand; through the interaction of the more earnest technical students and the more broadly-studying college students; in a word through the broader environment which the university offers, with diversity of life and interests, of teachers and students, of museums and galleries. For the adolescent this environment is to that of the isolated technical school as city life is to village life. Further, the teachers of the school of pure science and of the college should help materially the technical school in its investigations. Again, the grand scale should effect great economy, not so much in saving salaries and in widening the use of the more expensive instruments, as in fitting work to worker, and best of all in more fully supplying the eminent with work on their own plane.

Against these great advantages the zeal-chilling influence of the college student upon his technical fellow should count for little under all usual conditions.

DISCUSSION OF THE ORGANIZATION OF HIGHER TECHNICAL EDUCATION

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HADLEY: I agree very heartily with the general views of the paper. Yet I could not help thinking as I listened that a technical school-man would say that it did not present quite fairly the real objections that most of them feel. In practical cases like the question whether the Institute of Technology shall consolidate with Harvard University, or whether a new technical school shall be placed in connection with any university whatever, the real feeling of objection on the part of those who oppose it is due to the fear that the people in the university will regard the technical school, as they have done in the past, as an inferior form of organization, and will put before that school the alternatives either of diversion from the original purpose of the work, which was to educate people to make a living in a particular line of life, or of continuation in its old work, but under a sort of badge of inferiority.

Now, the alternative of either abandoning its purpose or accepting a position of inferiority will stand as an obstacle in the way of many givers who would like to found new technical schools, but wish them to be recognized as high-class institutions, and as co-ordinate parts of any institutions with which they are connected. Can we avoid this difficulty? Can we meet the wishes of those people? On an answer to that question will depend the answers to the question of whether we can have our technical schools organized in connection with our universities.

The aim of the technical school is to prepare people for the successful exercise of various professions and callings in life. What is the aim of the university? Most people would say, to promote knowledge. I believe that definition is at once too broad and too narrow. There are

a great many other institutions which attempt to promote knowledge. The distinctive aim of a university is to establish and maintain standards. I do not give that as an original definition, but as a description of what makes the university distinctive from other institutions that are trying to promote knowledge. You cannot get this ethical element out of the university idea; the university is primarily and mainly occupied with the purposes with which learning is pursued.

Now, there are some cases where the association of a technical school—using that in the broad sense—with the university has resulted in the very highest development of both. The association of instruction in the Johns Hopkins Hospital and in the Medical School here with the University has made that medical school a place where without in the least detracting, but rather enhancing, the efficiency of the institution in making good physicians, there has been established and maintained a set of ethical standards in connection with the profession which it would have been very difficult to maintain had not we found this association of the two.

Now, can we do with all technical schools what has been done by Johns Hopkins for medicine? I believe we can; but it will be necessary for the university authorities to avoid certain mistakes which most of us are in danger of making when we come to deal with technical schools. We must, in the first place, avoid the mistake of thinking that the pursuit of knowledge is necessarily higher than the pursuit of public service. The question whether a student for the degree of doctor of philosophy is engaged in higher or lower work than a student of arithmetic depends very largely upon the man, the spirit, the purpose. If he is engaged in collecting with a muck rake a number of pieces of muck that nobody else has collected before, his work is not higher, but lower. If he is doing it because he can publish his name as the first man that made a collection of that kind, the university that stamps his work as high, and the work of the student in a school of commerce as low, will be making a mistake. That stands absolutely in the way of co-operation. And, in the second place, we must be prepared to give to the purposes of the founders of technical schools a degree of independent recognition which is not always easy. We must avoid the constant temptation to make them research laboratories, to make them places where new knowledge will be discovered, rather than places where students will learn to make a living.

If we can do these two things, we can make them part of the university; and they will be unconsciously, but overwhelmingly, affected by the higher standards of the university as a seat of learning. This will work against pure commercialism and against narrow specialization, against the influence which turns out machines, and not men. We must make room for this real objection to consolidation as it has been sometimes managed, and give the technical schools the good which I am convinced they really need, without burdening them with what I am convinced is a real danger and is liable to become a real evil.

MR. HOWE: It seems to me the matter of the keeping up of standards depends on men rather than on classes of institutions. I do not think that you will readily find an institution where the desire to keep up standards has been stronger or has had more influence than in the Institute of Technology. You will find there a group of teachers, and students, too, conscientious men with high ideals who have striven always to keep up standards even at the danger of driving the institution into bankruptcy, as this policy at times promised to do. The feeling was, O Neptune, you may sink me or you may save me, but I will keep my rudder true.

As to having technical schools places where new knowledge is to be found out, so far as my own part is concerned, I find that is very important. The young metallurgist is really hired in the

works, i. e., in his professional practice, as an investigator, and he is almost at once set at discovering something new. At the very first this is really in order that he may show his own ability while busied with a harmless task, though nominally it is in order that he may discover some improvement on existing practice or the cause of some present trouble, or that he may gather and analyze statistics as to some matter on which light is needed. And soon this nominal purpose becomes the real purpose of his work, if he is really fit for it. In order to prepare him for this his graduating thesis is based on an original investigation, not necessarily a difficult one; but so far as it goes this thesis work must be original. He must state briefly and clearly our knowledge of the subject in hand, and must then add something to that knowledge, as he would write a report to his superintendent. This seems to me among the most valuable things that we teach him. In metallurgy, at least, that is the situation: the industry asks us for investigators.

MR. VAN HISE: The state institutions in the West are following two different policies in respect to the technical schools. Some states concentrate all of the funds which go for higher education at one institution, others divide their funds between two or more different organizations. The men connected with institutions where the funds are consolidated think there is no doubt that this is advisable. In such universities the work in the languages and the sciences for the technical students is done in the departments of liberal arts. The technical school is thus able to concentrate its entire fund upon its special work. For instance, a college of agriculture, connected with a university, is not obliged to maintain departments of pure chemistry, physics, or botany. All this work is done in the college of liberal arts. The department of agriculture maintains only the applications of pure science to the problems of agriculture. Thus the students in the schools of applied knowledge gain their training in fundamental subjects in the college of liberal arts. In this way they obtain a much broader foundation for the work upon which their applied sciences should be built than is possible in many of the schools of applied science. In every state university in the West in which the technical schools and colleges of liberal arts are united it is taken for granted that the union is of great advantage to the technical schools, not only as producing better educated technical men, but as conserving the special funds of the technical schools.

Also the college of liberal arts and the graduate school gain from the association with the technical schools. The students in the former organizations have opportunities to broaden their education by electing subjects in the technical departments. Further, the discoveries of the colleges of agriculture and of engineering, of material value to the state, are powerful levers in securing general university funds. In those states in which the funds are divided this is in general regretted, both by the technical men and the men connected with the institutions given the name of university.

MR. STRINGHAM: We are at present discussing the question of higher technical instruction in California, and we find the status of the technical schools in the universities far from satisfactory. Although the undergraduate course in engineering is of the same length, and of perhaps greater difficulty than that of the college of liberal arts, I doubt whether the education which the young man obtains in such a course is of as high a type in the making of the man as the older education of our colleges. And yet a great many graduates of our technical schools prove to be capable of undertaking field and engineering work of a high order.

The time is at hand when many technical problems must be attacked, not by the old rule of thumb but by scientific method, and by men who are trained in that method. We already under-

take a certain amount of research work for practical industrial purposes, and we shall shortly actually organize graduate courses in engineering. It is not possible to crowd into the undergraduate course enough of the higher instruction that prepares men for the modern problems of engineering, and our graduates are themselves asking for a larger equipment than that which the University has furnished in the past. We give only the Bachelor's degree for a four years' course, and we have never yet given the degree of engineer at the University of California, though in the near future we expect to offer higher courses of study that shall lead to that degree.

MR VAN HISE: The same question has come up with us, and we already have attempted one solution and are now trying another. For a long time we thought we might induce students planning to become engineers to devote at least two years to the college of liberal arts before going into technical work, and thus secure a six years' course. That attempt failed. We have now attacked the problem in another way. We shall introduce, the coming year, five- and six-year courses in engineering, which distribute liberal studies through a longer time than two years. For five years' work the degree of bachelor of science in engineering will be given. For the six-year course, providing advanced engineering studies, we shall give a professional degree. Students who take the sixth year will be classified as graduate students, and the degrees of electrical engineer, mechanical engineer, and civil engineer will be regarded as higher degrees equivalent in value to the Master's degree. Under the general plan will be given one illustrative course combining studies in commerce and studies in engineering. There is a demand for men who have both technical and business training. If we succeed in the proposed five- and six-year courses we hope to produce for the engineering profession broadly educated men as well as high-grade engineers.

MR. PENNIMAN: The experience of Pennsylvania has been very interesting along this line, although the result has led in a different direction. Since about 1850 there have been scientific courses, and gradually these have been lengthened from two to four years. Now the scientific course has been still further lengthened, and the plan has been somewhat changed. At the end of two years the student chose between a number of subjects; at the end of four years he got his Bachelor's degree, and at the end of five years his degree in chemistry, or in engineering. We found, however, in response to the great public demand for the regular technical course of four years, as established at Troy and Stevens and other technical schools, that it was wise for us to inaugurate a four years' course leading directly to the degree of Bachelor of Mechanical Engineering, or Civil Engineering, and our old five-year course lost students, until it became eliminated by the process of time. Since then we have tried to arrange combinations between courses in arts and the technical courses; but though we have tried our best, we have found it extremely hard to get men to take the six-year combined course. A number of men, after completing their arts courses, go into engineering work, and, on the other hand, a number who complete the engineering courses then liberalize their work by taking some of the arts work in addition. But we have had few students in any five-year course, as such, since the organization of the four-year course. The tendency is to crowd a technical course with subjects deemed essential to turning out a chemist or an engineer or an architect, and to slight the so-called liberal subjects. At the same time, we are making the effort to retain as large an element of liberal culture in these courses as possible. I suppose about one-quarter of the engineering courses would be accepted in an arts course for a degree as work in pure science or literature.

The tendency in a great many technical schools is to have mathematics and chemistry taught from the engineering point of view; to select a man, if possible, who has had an engineering training to teach the engineers mathematics and chemistry—to make technical, as far as possible, subjects which we ordinarily regard as pure science.

The university should stand for standards as well as for the pursuit of knowledge, it should turn out not simply engineers, but men who are broadly trained and "see life steadily, and see it whole." "It is well to build your castles in the air; that is where they ought to be; now, put your foundations under them!" said Thoreau. In an isolated *technical* school it is exceedingly difficult to do that, because the whole atmosphere is influenced by a body of trained men along a certain line.

We have found that the great problem is to keep the technical courses liberal, and we have tried our best to do it. But we have found, as I have said, that the old five-year course does not work.

MR. STRINGHAM: We do ill in bestowing university honors for an inferior grade of work. Some of the work now done in the technical schools belongs in the high school. The manual training and much of the so-called shop work belong there and our hope in California is that it may all go there ultimately.

Our first attempt to extend the time of preparation for the technical occupations is being made in our recently organized school of architecture. In this school a six years' residence is insisted on and the course includes the essential element of liberal culture. The student may get his Bachelor's degree in the usual time, but to the preparation for the profession of architecture he must devote six years and there is no alternative. I hope this is only a first step and that some day we shall be able to insist on similar conditions in the other technical schools.

MR. HALL: I was very much impressed by an article in one of the late numbers of a journal devoted to higher education, where the point was brought out that the time has passed when it is necessary for anybody who is studying at a technical school to know the whole of any of these great sciences. For instance, in chemistry or in physics, a man must select certain chapters and certain topics, and is lost if he tries to make himself an all-around chemist or physicist. This article went on to give for the various lines of technical higher education, those parts of these sciences which it is necessary for a man to know.

We are going to have the same question with regard to the integrity of the great sciences of chemistry and physics, the same discussions as to their teaching as integral things, that we are now having as to the relation of the humanities to technical studies. There is a great deal of very significant truth in what Professor Howe brought out in regard to educating young men, and reference to some practical application of what they are learning, and also to educating them under the influence of men who have come in contact with men, as the technical teachers have, far more than the academic teachers.

I wonder if there is not a little truth in the old definition that to place a young man in the academic environment was to retard his development, to keep him lingering in the charming paradise of youth, in association with people youthful in all their habits, and isolated from all attempts to bring his knowledge to bear.

The statement of an eminent professor that a man can now get through an A.B. course,

if he chooses his subjects wisely, with one hour a day of work, may be connected a little with the charm that graduates find in the old institutions that Mr. Howe spoke of. I think the meaning of the word "school" (leisure) had some significance. The old idea was not to work very hard. It may have its place among the humanities, to keep that idea in our civilization and in our country where everything presses to maturity before its time. About the time this University was started the idea was, you must have pure research to discover scientific truths; and then, afterward, application of those truths. The idea then was that the desire to apply was not a stimulus for all research. Now, in a great many ways we are just reversing that. The time may come eventually when we will have applied education first and reserve research in pure science for those who have felt the stimulus there is in studying application of science, have been by natural process of selection fitted for it, and have demonstrated their fitness to really add to the sum of human knowledge.

MR. HOWE: At Columbia a good deal of thought is being given to this question of raising the standard of the graduating degree in technical subjects. The great difficulty has been that if there are two grades of degree apparently all will take the lower grade. They want a degree, they want to graduate, and they take the path of least resistance, the lower degree. That has been the dread we have had. What we have done is to prepare a set of courses in the academic department, including a large proportion of scientific matter and covering the first two years of the technical course, so that after graduating as Bachelor from one of those courses, the student is then in a position to take a technical degree in two years; making it a six years' course. While this course has not been rushed into, six to eight men a year take it, in many cases deciding after they have entered college that they will arrange their course so as to be able to take an engineering degree after six years.

We hope eventually to have the technical schools altogether graduate schools, like similar schools of law and medicine. At present such a change would probably divert the vast majority of students to other institutions. But our hope is that ultimately the number of students available would justify us in saying that these technical schools are graduate schools only; that you will get the engineering degree in four years here, but you must have a Bachelor's degree before you come. Now, the community wants another class of men also; men who have got four years' training in a certain thing; and there is a certain class of men who will say, "I am not able to give six years to this." Our answer is "Very well, there are institutions for you; our institution is for the elect, those who can spend the years here that we prescribe." That is what we hope to reach some day, but we fear that that day is not very near.

MR. VAN HISE: It seems to me that it will be necessary, either to prescribe the work leading to the A.B. or to require four years of technical work, just as the medical school does. The student's main work in the A.B. course may have been literature or history.

MR. CRANE: The general plan which President Van Hise has laid down was established at Cornell several years ago—to combine the courses in civil engineering and mechanical engineering in six years. But so far as the number of students goes, I cannot say that it has been successful. As to the encouragement of higher study, that has been to a certain extent provided for by the encouragement of graduate study in engineering. A considerable number remain to take the Master's degree, and some remain for the higher Doctor's degree.

At Cornell certainly the influence of the college, the school of humanities, or our technical schools has been most salutary and profound. Through it the standard in all the technical schools, both for entrance and graduation, has been gradually raised. On the other hand, the influence of the technical schools has been most beneficial. It has been delightful to me during many years to mingle with a body of students in the different colleges, who in spite of their very different pursuits, have been so remarkably homogeneous. Even when the academic course was the largest course in the university; there has never been the least feeling of inferiority on the part of the technical students. It is no longer the largest, the school of engineering now having over a thousand students.

As to the economic side, it certainly seems unwise to devote the enormous sums of money necessary to a separate technical school when, as is the case both in state universities and elsewhere, the college can furnish the technical school with a very large part of its study and its material in mathematics, languages, and pure science.

MR. LEUSCHNER: At the New York meeting several speakers drew a distinction between those professional schools which place a man in a position to earn his bread and butter and the so-called university professional schools. President Hadley has expressed exactly what was insisted upon at the time—that the university stands for the preservation of standards; and while there may be a place for, say, medical colleges, it was considered the duty of American universities to develop the medical university school as distinguished from the medical college. In reference to engineering schools and university schools of engineering, it is much the same. Beside preparing a man to earn his bread and butter in the shortest time possible, and giving him a certain amount of liberal education, there is this third problem; to put something on top of that bread-and-butter education, to educate, in the graduate school, engineers who are in a position to promote their particular subject.

In California it is our hope that the degrees of Civil Engineer, Electrical Engineer, etc., may ultimately be on the same footing as the degree of Doctor of Philosophy, and include the necessary liberal culture, the necessary professional training, and the necessary power to promote the particular subject. A student may get the Master's degree in our Engineering courses in one year after taking the degree of Bachelor of Science, but the degree of Civil Engineer he cannot get before three years.

MR. CARVER: In the discussion thus far it seems to be assumed that so-called college studies are more liberalizing than technical studies. I think that the question, "What constitutes liberal culture?" needs some looking over. Possibly a six years' engineering course might be considerably better from the engineering point of view, might make better engineers, than a two years' engineering course on top of a college course. On the other hand, a man trained in an engineering course, with a fairly broad curriculum, may be just as liberally trained as though he had spent four years of that course in what we ordinarily call "the college." Perhaps there is something of itself unpracticable and narrow in the objection to the attitude of mind which would thank the Lord that here is a subject which has no use whatever. If a man can get as much satisfaction out of the contemplation of the infinite as he can out of the consumption of highballs and caviar it is as profitable for him to spend his time in the contemplation of the former as in the contemplation of the means of getting the wherewithall for the latter. "What constitutes practical education?" is still, it seems to me, the question.

MR. WEST: At Princeton we have had a four-year undergraduate course and a six years' course leading to the E.E. Four years of the latter were given toward the Bachelor's degree; this included a certain amount of scientific study fundamental to engineering. Then came two years devoted to the theory of electrical engineering. We have had the larger number of students in the four years' course. The result has been inferior by the testimony of the men themselves. We have had very few students in the six years' course; but each is a picked man. Almost without exception, by the testimony of the director of the schools, those men in the electrical engineering schools have distinguished themselves. The poles between which we vibrate seem to be more students with inferior results or few students with superior results. It is natural to suppose that what is meant is the elevation of technical schools associated with universities to the level of the great professional schools based on liberal standards. Whether that should be by prescribing two years of college studies or four, is a question to decide. From our experience at Princeton we have learned that the two ideas cannot any more than can a professional and a college education be driven side by side; we must in some way put them tandem.

MR. McLAUGHLIN: Perhaps I ought to say a word in regard to past conditions and the apparent present tendency in the University of Michigan. In the first place, the tendency has been not in the direction of co-ordination and combination within the University, but in greater separation of the technical school from the arts courses. Comparatively recently single departments of English and German have been established in the technical schools, on the ground that the engineer students need to have those subjects taught from the engineer's point of view. In the next place, the engineers have asserted that it is impossible to turn out a practical engineer in four years; at the present time the course is four years and a fraction—at least one summer's work is demanded in addition to the four years. I think the result inevitably will be the establishment of a five years' course for the Bachelor's degree in engineering.

Some of us connected with the arts department have felt that there ought to be such a combination that one year or two years of arts work will be demanded for the work in the technical school. But at the present time the tendency does not seem to be in that direction, because engineers say, "We do not want four years of technical work added to one or two years of arts; we want and need more than four years of technical work to prepare a practical engineer for his regular occupation." The present tendency appears to me to be to make the technical course distinct, and not combine to or add to the undergraduate or regular arts course—at least not for the present. Certainly there is no immediate prospect of the technical course's becoming a graduate course in any proper sense.

THE THIRD SESSION

COINSTRUCTION IN GRADUATE SCHOOLS

PAPER PRESENTED BY ALBION W. SMALL, OF THE UNIVERSITY OF CHICAGO

At least one fact is beyond reasonable doubt. There probably are subjects about which it is possible to change men's opinions by argument. Coeducation is certainly not in the list. If opinion has been formed with reference to this subject, either *pro* or *con*, no

amount of reasoning has ever been known to change it. New experience alone has altered prejudice.

It would be a waste of time to consume any portion of our session reviewing the *a priori* arguments with which we are all familiar. My duty seemed to be to ascertain the experience of the members of this Association, so far as graduate coinstruction has been undertaken, and to collate the evidence as to its actual working. To do this I have applied to each of the members of the Association for official information, and also, in numerous instances, for expression of individual judgment based on actual experience. Answers have been received from each member of the Association with the unfortunate exception of Harvard. These answers contain nothing which tends to justify conclusions very different from impressions probably current in all minds that have given any attention to the subject. The evidence merely affords somewhat more concrete justification for casual opinion.

So far as the question of coinstruction in Graduate Schools depends in any way upon knowledge of the aggregate number of graduate students in the country, we must be content to eliminate that factor from consideration. Graduate study is such an uncertain quantity that it is impossible to reduce statistics on the subject to an acceptable common denominator. It is probably, however, a justifiable assumption that the experience of the members of this Association furnishes all the evidence as to the qualitative effects of graduate coinstruction that would be available if the total number of graduate students in the country were accurately ascertained. I have confined my inquiries therefore to the members of the Association, and even these have not given me the means of stating precisely the total number of graduate women. The number reported by members of this Association for 1903-4 was 835. To this number the graduate women in Harvard and Michigan must be added. The graduate men in those institutions numbered in the same year, 2,201. To this total we must add the graduate men not only in Harvard and Michigan, but also in the Catholic University, Clark, Princeton, and Virginia. The graduate women in the universities of the Association are thus found to be a fraction smaller than one-fourth of the total number of graduates in graduate and professional schools of the Association.

At present I am unable to discover any important reason for considering in this connection the arithmetical totals of graduate students divided by sex. The percentages alone have at present any pertinence.

The principal facts are as follows: Four members of the Association, namely, the Catholic University, the University of Virginia, Johns Hopkins University, and Princeton University admit no women to graduate courses. Johns Hopkins Medical School is regarded in this statement as a distinct institution. The other members of the Association admit women as follows: No different terms are prescribed for men and women at Clark, Cornell, Pennsylvania, Wisconsin, Chicago, Stanford, and California. At Yale the terms are identical except that the degree of Ph.D. only is conferred upon women. At Columbia women are admitted on equal terms to Political Science, Philosophy, and pure Science, with certain restrictions in the case of pre-medical courses, but women are not admitted

to courses in Law, Medicine, or Technology. Certain individuals also decline to receive women to their courses in the departments otherwise open.

The attendance of women in the Graduate Schools is reported by the different universities for periods which vary from five to thirteen years. In the following schedule the average percentage of women is given for the number of years reported in each case. The percentage of women students in graduate courses has been: At Clark, .00; at Yale, .114; at Johns Hopkins Medical, .14; at Pennsylvania, .189; at Cornell, .19; at Columbia, .208; at Wisconsin, .23; at Chicago, .24; at Stanford, .34; at California, .446. The figures furnished by Michigan did not show the ratio.

It would of course be possible to propose many questions, both in analysis of these figures and in demand for further information. For instance, the most obvious inquiry is with reference to distribution of women among schools and departments of the universities of which they are members. It has not been feasible to obtain satisfactory information on this subject, first because some of the universities have not sufficiently classified registrations, second because the classifications of different universities do not correspond. Nothing appears in the statistics reported to impeach the current theory of distribution, namely, that the proportion of graduate women is lowest in Technology, increasing in the order Law, Medicine, Physical Science, until it is highest in Arts and Literature. The University of California alone reports a constant excess of women over men in graduate courses in the latter group. In the year 1899-1900 the women were 53 per cent. of the total graduates in the Liberal Arts courses. The proportion has increased each year since. In 1903-4 it was 56.6 per cent.

The figures tend also to confirm the general impression that the number of graduate women increases in direct ratio with the availability of the instruction for immediate application in secondary teaching.

It would be interesting also to know how the proportions of men and women vary in the different years of graduate work. This does not appear from the statistics. The percentage of women who take the Doctor's degree however is apparently much lower than the total percentage of graduate women.

Whether it would be profitable or not to pursue such inquiries, the material for exact conclusions is not now available. The only task remaining has been to search for evidence touching the question whether experience justifies the assumption that, in practice, graduate coinstruction presents in any sense a "problem," from the administrative or educational or scientific point of view.

We must discriminate at once between problems of the individual and those of the university. It may be altogether unwise for women to enter courses in Technology, for example, and each university might feel bound to discourage election of such courses by women. Even if some women should persist in exercising their legal right to take such courses, in a state university, for instance, no university problem in the strict sense might

necessarily result. The individuals would simply have taken their own risks of preparing themselves for careers in which their services would not be in demand.

Not having power to compel the attendance of witnesses and to administer oaths, the writer may not have been able to elicit all the evidence which more searching inquiry might have brought to light. So far as he has been able to go he has encountered a few confessions of unshaken prejudice against graduate coinstruction, and one or two vague hints that more might be said against the plan if it were wise to disclose local conditions; but beyond this not a clew has been discovered that pointed to any single case of difficulty in the operation of the plan sufficient to dignify the situation by applying the term "Problem." Whether the particular circumstances of a given university would make adoption or extension of graduate coinstruction wise, is, of course, a question outside the scope of this paper. The present point is that no university, and no professor, has been found willing to express a judgment that the plan in practice has presented problems beyond trifling matters of detail.

The evidence justifies a suspicion that in certain cases difficulties have existed in the form of an unreconciled attitude on the part of individual professors. These men appear not to have been willing to adopt the programme of candid experimenters, but to have been as intolerant as possible. This simply means that, so far, the conditions for a fair trial of the plan were lacking, and no consequent friction or failure is fairly to be charged to the plan when applied in good faith.

The president of one of the universities in the Association writes:

I do not see any problem possible in the subject assigned to you. . . . It is much like the inquiry, What different methods should you pursue in teaching the multiplication table to girls and to boys?

Another expresses himself in the following terms:

There are no problems connected with the graduate coinstruction of women and men. The only problems I know of in coeducation refer to the satisfying of the more or less unreasonable demands of men and women educated monastically in the East, who do not believe that western institutions are quite the thing anyway. There are some minor problems, as where a great multitude of women are scattered over a large city, or when they are huddled in garrets in an unsympathetic village. These are not problems of education, but belong to the boarding-house side of the university.

To be sure, the higher critic would be well within the limits of cautious prudence if he ventured the hypothesis that the source of these statements was on the sunset side of the Alleghenies. He would consequently rate the judgments simply as favorable prejudice unshaken by experience. The authors of the statements would doubtless permit the criticism to go without challenge, simply testifying that even if their prejudice in favor of the plan is in itself no weightier evidence than prejudice against it, their long experience with the workings of the system has encountered no good reason for revising antecedent opinion.

In one instance a young instructor in one of the Physical Sciences spoke impetuously as follows: "Women are a nuisance in the laboratory. They are absolutely helpless. They can't even scratch a match for themselves. It is a bother to have them to look after." When these remarks were repeated to the head of the department, he smiled rather mysteriously, but on being pressed for a definite comment said,

I am afraid there is some truth in these opinions. My experience has been that very few women have the mechanical skill required for successful laboratory manipulation. At the same time, this is a matter that in most cases corrects itself. I wish that women would not take graduate courses in my department, but I have never seen sufficient reason for denying them liberty to find out by experience whether they are able to accomplish good work in it.

An officer of another university writes as follows:

I should hardly say that the question of coconstruction in Graduate Schools has become a real problem here, or rather that it has continued to be such. . . . Some of my best students have been women; and again, I have had more annoyance from certain women than from any of the men. It is less often possible for the women to settle down exclusively to the work for the higher degrees than it is for men, and this is apt to make their work less even and constant. I think also that the proportion of "degree hunters" is apt to be somewhat larger among the women; but I have never made any careful calculation—as perhaps none could be successfully made—on this point. Whether men are less willing to go to institutions where they are thrown with women students is a question I have often heard raised. My experience here hardly affords data for a decision of this question; it certainly does not tend to support it.

Newspaper reports of alleged sweeping condemnation of coeducation by one of the most prominent members of a western university faculty led to a request for his testimony on the subject of the present paper. His reply contains the following:

Like yourself I do not feel that there is any "question" in the case; . . . as for *graduate* coconstruction, I can testify that in my somewhat long experience of it there has been absolutely nothing against it. Rather, almost, everything in its favor. Some of my very best higher work has been done by women again and again. Their work in Kant, Hegel, the toughest problems of Epistemology, and in advanced Ethics—all involving research at first hand, reduction and criticism of "sources"—has been of a high order; and though the men have hitherto always carried off the *very* highest honors, yet the best women have come in at a *good* second; and in a few cases have made it almost impossible to tell who was the very best. Some years the women have done all the best work of those years, probably not up to the grade of my most distinguished men. But then of those latter it must be remembered that they were exceptional, with the stuff in them out of which have been made authoritative professors in several leading universities.

An officer of another university writes:

The only question that comes up in connection with the presence of women graduate students which occurs to me at the moment, is in the case of colleges which are legally non-coeducational. If the question of adopting mixed courses comes up, and their adoption is decided upon, a modification is rendered necessary of the rule excluding women students from undergraduate courses.

In this way such an institution becomes in its more advanced undergraduate work practically coeducational.

It is commonly understood that if difficulties in graduate coinstruction occur anywhere it must be in the medical courses. As there are few strictly graduate medical schools in the country which admit women, the amount of evidence from this source is extremely limited. I am able, however, to present a statement from an officer of the medical department of Johns Hopkins. He says:

Women are matriculated with no other conditions than those prescribed for men, except in the male genito-urinary work. . . .

The statement continues:

So far as I know, it has not been a problem to us. Coeducation has occasioned no difficulties, none at least that have come to the surface. Our freedom from dissatisfaction on the part of either the students or the teachers may, however, be due to the fact that the proportion of women students has always been low. So far as I can learn, it is a general feeling among the teachers and the male students that it would be better for the women to study medicine in a school of their own, but I believe that this feeling is based upon suppositions of difficulties that might arise. As a matter of fact none have arisen so far, and possibly our entire freedom from the necessity of discipline in the matter of classroom behavior, and some of the foolish practices of college students, may be due in part to the influence of the woman element.

Instead of preparing a statement directly in response to my request, an officer of the Rush Medical Faculty sent a copy of a reply which he had recently sent to a committee of women representing an association of medical students in Scotland. They had asked him for information about the status of coinstruction in Rush Medical College. From the reply I abstract the following:

Two years ago Rush Medical College proper, at which place the clinical teaching is done, and which institution has been open to male students only, from its foundation over sixty years ago, opened its doors to women, and since that time a considerable number have been in attendance both at the University and at Rush Medical. The plan seems to work very satisfactorily, and it was a matter of surprise to some members of the faculty that the change at Rush Medical two years ago was accomplished with so little friction; indeed there was no evidence of friction nor even of any special interest whatever. The presence of women was accepted by the men students without any comment, in just the same way that the introduction of an equal number of male students might have been received. So far no division has been made in any of the classes, and the men and women students take all of the work together, even in the practical laboratories of Anatomy, etc. It is my impression, however, that one or two courses in the clinical line are not taken by the women students, and probably would not be selected. As the course for the last two years is wholly elective, this is very easily managed.

As you invite an expression of opinion, perhaps I may venture to state my own views in reference to the matter of women in medicine, and their coinstruction with men.

First, as to the fitness of women for the study and practice of medicine. While I am one of those who believe that there are certain fundamental differences in the mental, as well as the physi-

cal makeup of the two sexes, I believe that in the study of medicine the directions in which women as a rule excel about offset their deficiencies in certain other respects. For a few years I chanced to be Professor of Pediatrics in a college exclusively for women, and at the same time was the occupant of a chair in Rush Medical College, then exclusively for men. [The writer now illustrates from his observations in the two colleges.] To my mind the most discouraging thing to medical teachers in reference to women is the fact that only a small number of the sex can ever take up the study of medicine, and these are by no means those individuals of the sex who are best fitted for medical study and for success in medical practice. . . . For at least thirty years women have had a fair chance in the profession of medicine in America; . . . notwithstanding these facts one may count on the fingers of one hand the women who have attained to even third rank, although several thousand women have graduated during that period. I think one could safely say that not one woman has attained to the first rank, and only one in America to what one might perhaps designate as the second rank, of medical thinkers and practitioners. I believe this state of affairs . . . explains the indifference (I think it is seldom antagonism) of many of our ablest medical teachers toward the women medical students. . . . Notwithstanding all that I have said above it is true that a considerable number of women must look forward to a life of self-support, and naturally some of them look to the professions as a field of activity. None can deny this right, and while I do believe that the practice of medicine, in the accepted sense, presents certain special difficulties for women, and I think these difficulties should be made clear to them before they make their decision, this decision should rest with them at last, and if they conclude to study medicine, they should have not only the right, but should be given every opportunity and advantage in the way of preparation that is afforded to their brother medical students. I do not believe that it can be ever possible to give such opportunities in a school for women alone and for a number of reasons. . . .

Finally, in a line of activity like medicine, it seems to me that the encouragement of any division of sex is illogical and unnecessary. There are certain topics in medicine that I believe ought to be taught separately. One who holds certain notions about the charm of womanly modesty and reserve, notions which are perhaps a bit old-fashioned at the present time, cannot but regret the inevitable hardening and coarsening effect on these qualities, of the contact with certain things by the two sexes together. There are some women whose womanliness is so fine and strong that nothing of this sort ever deteriorates it, but there are many others who do suffer distinctly. These, however, are matters of detail which are very easily managed in a properly conducted institution. One thing is certain, however; namely, immediately after the woman physician graduates, and enters upon the practice of medicine, she must meet all conditions and all problems under circumstances far more aggravating, so far as the presence of men is concerned, than are any conditions she would meet in college. She ought of course to be prepared for this.

Although by far the greater number of our medical schools are neither graduate nor coeducational, the facts seem to justify citation of evidence from some of the more prominent of these schools on grounds hinted at in the letter that I now quote. From the medical college of a state university the following was received:

Our medical department is so new, and the experience consequently so brief, it will, I fear, be of little assistance. So far as we can see, in this type of institution, there is no problem in con-

nection with coinstruction. I am not sure that inclosed figures really fall within the limits of your inquiry, since the medical school here is not a Graduate School, but admits on equal basis with the undergraduate departments of the University. The greater intensity of professional courses, and coincident greater definiteness of purpose on the part of students, will certainly do much to prevent the arising of any problem in this field, for these factors militate against the coming into it of those individuals of both sexes whose lack of balance accentuates the situation.

From the medical school of another state university a report was received which contains the following:

No "problems" of a formidable kind have come up. The hostility of the men students, at times insulting and persistent, has always been dealt with promptly and vigorously, so that of late years the two classes of students have been plodding along side by side, but without the least show of cordialty on either side. The women students compare very well in scholarship with the men, and outrank them altogether in deportment.

From the letter of another state university medical school the following is abstracted:

The numbers are decreasing, as the women cannot stand the pace. There is no problem, and all are treated alike and must meet the same conditions. At the risk of seeming ungallant I must say, that with a few exceptions who approximate the masculine type, women are unfitted to study and practice medicine. Of our women graduates perhaps 20 per cent. are creditable (three or four brilliant) 30 per cent. more mediocre, and the balance worse. Examination is the solution so far as medical schools are concerned.

Without comment on the foregoing testimony we may notice one or two items of a different sort of evidence. Letters from the presidents of all the leading women's colleges contain strong statements of their well-known position, namely, that undergraduate work for women is carried on under most favorable conditions in separate colleges, but that coeducational graduate work is much to be desired. As nothing new appears in the statements written in this immediate connection, this digest will suffice.

It was hoped that the testimony of women who had taken their Doctor's degree in coeducational universities might contain something which their instructors had overlooked. Inquiries were made of graduates of several universities. No more evidence was gained from this source, however, than from the others that university problems are encountered in the actual practice of graduate coinstruction. In the replies there are cautious references to improvements possible in the conditions in the Graduate Schools of certain universities, but they refer to desired change from partial to complete adoption of coinstruction, rather than to objections that have arisen when coinstruction was unlimited.

Two letters in this group deserve to be quoted. They happen to be from Doctors of Philosophy of the same university who now, however, are in the faculty of two leading women's colleges. The former of these expresses herself as follows:

My own views seem so little worth while that I have undertaken to supplement them by talking with other women at —— who have done university work (here follow certain criticisms of local conditions). The point was also made that graduate women are in general at a disadvantage

because their intellectual contact with instructors is by convention practically restricted to the lecture-room, while the men may, and often do, meet their instructors in a more informal fashion, which permits of freer and more healthful discussion of their work. There is something, I think, in this point, although I am not sure how much, and at any rate I do not see how the disadvantage can be easily overcome. That it may be slightly lessened is, I am inclined to think, possible.

All agreed that women are received for graduate work with reasonable courtesy, though never with even the academic type of enthusiasm; and that although the presumption was invariably more or less against them as women, that is, in the way of believing in their accomplishing great feats, they were always given a good fighting chance, and if they demonstrated superior capacity were granted due recognition and honor. All agreed too that while, on occasions involving discriminations between men and women, where the attainments are practically equal, the preference is much more apt to be accorded to the man than to the woman; but that the tendency is perhaps justified by the greater physical strength and poise of the average man, as well as by the greater likelihood that he would subsequently devote himself to genuinely scholarly work.

This last point indeed suggests the main drift of my letter. I think most women do feel themselves at some disadvantage as women in graduate work; for the conviction that they are admitted, and not sought after, makes it seem a double obligation upon each one to justify her presence by her attainments; and this in itself begets a certain strained and feverish effort which reacts unfavorably upon her work. The fault of all this, however, seems to me to lie so largely in the physical limitations of women, and in their frequent lack of mental discipline, that I am not disposed to lay much blame anywhere else. Those women to whom what I have just said would not apply at all seem to me thus far too exceptional to disturb the generalization. The chief hope for a remedy of the condition lies, I believe, in the stronger physical type which the women's colleges are now doing their best to develop. They will send into university work women better able to cope with men in the plain sphere of physical strength and endurance, and this ability will react favorably upon women's work, and so upon the esteem in which it is held as a type. In my judgment, however, the difficulty will never be completely done away with. I have written only of disadvantages of coeducation in graduate work. . . . I could of course have said much of the advantages, because I believe it is the only method at all worth while for women.

The second letter contains perhaps the most central consideration in the whole argument:

The reason that women in general feel strongly on the question of equal privileges in the universities already in existence, is that they feel that the gaining of such privileges is the only chance, for years to come at least, of obtaining any adequate training in graduate work. The question at stake is not merely: Shall women be given equal privileges in our universities? but Shall they be given any chance at all to obtain the best instruction in the advanced courses? It is not conceivable that there should be universities of equal equipment for women alone for a very long time if ever. The economic waste of duplicating libraries and laboratories, if nothing else, would be too great. If it is once admitted that women are capable of profiting by the best educational opportunities, and have a social justification in asking for them, then it seems to us that the only practical method of meeting the situation is to give them equal rights in the universities already in operation.

It would be an impertinence to assume that this evidence has not been analyzed and weighed as presented, and its weight appraised more accurately than the writer could estimate it. Nor need anything be said in explanation that the evidence as cited by no means justifies absolute inferences of any sort. A conclusive induction would, of course, have to rest upon a much broader and firmer basis. Still, it may also be pointed out that the evidence fairly represents the situation in the coeducational Graduate Schools. The absence of spectacular incident or of detail that calls for special mention may safely be regarded as significant. Coeducational graduate schools are simply enjoying the proverbial blessedness of the country that has no history.

If it is justifiable to draw working inferences from the very inadequate and fragmentary information available, the following may be suggested: First, as already indicated, no shadow of evidence from experience has been detected that women in Graduate Schools are in any way misusing their freedom. Second, no fragment of evidence appears that the presence of women in graduate schools in any undesirable way curtails the freedom of men. Third, the only danger to which the evidence points is one not threatened by women alone. It is the danger of surrendering the graduate purpose of training for investigation to the ambition for numbers. This is a scientifically suicidal impulse. It can be satisfied only by degrading graduate work into mere imparting of tradition knowledge. Most men as well as women tend to depress the standards of graduate work in the way suggested. Circumstances have made it, and doubtless will continue to make it, more exceptional for women than for men to succeed as investigators. If research is insisted upon as the programme of Graduate Schools, there is, therefore, hardly more reason for fear that women, with full liberty to elect all courses, will predominate in graduate schools, than that the Japanese will capture St. Petersburg. The statistics lend strong color to the suspicion that the larger the proportion of women in a university or in a department, the less real is the nominal distinction between graduate and undergraduate work; and *per contra*, the more genuine the work of investigation, the smaller the percentage of women who will care to undertake it.

Relatively fewer women than men have the means and the taste and the fitness and the nerve combined to succeed in research. Right or wrong, wise or unwise, the public does not enthusiastically welcome women to professional or investigating positions. Women know that the market for their professional services is limited, and until there is a revolution in social standards they would be defying fate if they should create a supply much in excess of the demand. If the typical woman had no more courage than the average man, still fewer of them would venture upon graduate study.

When the composition of this paper had nearly reached the present point the suggestion was made that possibly the question which should be raised is that which might be called *Coinstruction by Women*, rather than the familiar *Coinstruction of Women* herein discussed. If the suggestion is to be taken seriously in connection with graduate schools, the grounds upon which it must be decided, like those that must determine the

award of fellowships, can hardly be in doubt, until the proportion of women who excel in research has changed to an improbable degree.

It would doubtless be unseemly for a worker in a coeducational graduate school to exhort his unconvinced colleagues. I merely hazard one reflection in conclusion. Experience does not confirm the fear that equal franchise of women in Graduate Schools would either unwoman women in general, or compromise the freedom of men. It is, therefore, difficult either to admire the magnanimity or to respect the justice of adding arbitrary disabilities to the necessary obstacles that women must overcome in gaining full freedom of intellectual life.

COINSTRUCTION IN GRADUATE SCHOOLS

PAPER PRESENTED BY PRESIDENT G. STANLEY HALL OF CLARK UNIVERSITY

The higher education of most women ends with the Bachelor's degree. Most of the few who enter upon graduate work seek general culture chiefly in the humanities, and even in these very few desire the specialization required by the Doctor's degree. Not only is specialization less required in the vocations open to them but their nature is more generic and they take to it less kindly, are more liable to be dwarfed by it, and if it comes it is usually later in life than in the case of young men. Of this very small remainder seeking the Doctor's degree some are very attractive specimens of their sex, good and stimulating companions, and some are otherwise, but nearly all belong to what the late Professor Hyatt called the agamic agenic class with little wifehood or motherhood left in their bodies or souls. They illustrate Herbert Spencer's theory of splendid individuation developed at the expense of genesis for, beyond a certain very variable point, he deemed these two in inverse ratio to each other, so hard is mental and nervous strain upon all the reproductive powers. The question of the graduate instruction of this small but very select class is quite different from that of coinstruction in intermediate and college grades. Many as are the present evils of the latter, and great and radical as is the need of reconstruction, I can see no reason to oppose, but many to favor, the opening of every higher university facility to the insignificant number of élite women who are fit and wish it. My own experience with this class, comprising only one or two individuals a year for fifteen years, although I have supplemented my impressions by opinions of many others by correspondence, represents only one department and has little more value than an individual vote, and I will be correspondingly brief. Out of the whole number two deserved and would have had our doctorate had we then been authorized to give it to women. For refusing to do so we were severely and widely criticised in the press and were condemned in many women's meetings, but during the last four years that it has been available for women no one has sought it. From these limited observations and consultations I should sum up the present opinion in the general field covered by psychology and education as follows:

1. In the vague and somewhat indeterminate field called pure philosophy, including metaphysics, epistemology, speculative ethics, logic, theories about God, freedom, the soul, and the universe in general, covering the chief matters treated by the line of great romancers with ideas from Plato to Hegel; all these problems hardly exist for woman. She has even taken little interest in evolution, perhaps, as a German writer suggests, because belief in it is presupposed in her very nature. Categories, nominalism, realism, idealism, the nature of matter, good and evil and all that pertains to what Aristotle called the theoretic life, are abstractions that seem somewhat ghastly to woman's concrete mind. The same is true even of the new theoretical aesthetics. Some of these themes, to be sure, have been studied and taught with zest by women who desired to storm all the heights man has attained, and history shows a few very interesting cases of women following these excelsior paths, but always in the footprints of a hero of the other sex. While I can recall a few treatises thought to be oracular and others that show good powers of comprehension and exposition, I cannot remember a book or a thesis by a woman in this field that adds or even attempts to add a single new thought worthy of mention in the history of philosophy. Some have assumed that because women can often do well in the higher mathematics that they ought to be capable here, but these two fields have grown far apart since Plato or even Spinoza. Whatever we may think of the importance of this work for men—and I believe its historical importance very great—there is something, I confess, to me pathetic in seeing a bright woman struggling with these abstractions, and it suggests Plato's theory that absorption in the generalities of philosophy was progressive dying.

2. In some of the more empirical fields of psychology worked by the methods of observation and experiment women have shown great aptitude and have already done much. As soon as life or individuality, even that of plants, is concerned her set is more at home. In the scientific study of the myths, customs, and beliefs of Indians and other primitive peoples, her sympathy, tact, and insight has repeatedly achieved results which men could hardly have attained. She has not only supplemented the work of men but sometimes struck out independent lines and attained new results where men fail. The same can be said to some extent of the study of instincts, habits, and psychic life of insects, birds, or animals, or comparative psychology. Many of these she has domesticated. Those familiar with the recent literature in this field will at once think of the names of a few women of singular ability. The same is true in the study of infancy and childhood where her intuitive insight gives her a decided advantage and where much of the best work so far done is hers. Indeed, in all fields more well-trained women are greatly needed for the progress of science, and I can see no reason why any university or department should not welcome all those who are competent and show promise to every facility.

3. In experimental psychology we already have a growing body of valuable memoirs by women which are really contributions of more or less value to the sum of knowledge. They have deftness and delicacy of hand in laboratory manipulation, care and conscientious fidelity in recording results, and perhaps more patience with details than young

men. Although woman is usually so far less independent and has less originality, she often makes an ideal research assistant (which, a French physicist tells me, is really the relation of Madame and Monsieur Curie). Here she has shown almost boundless capacity for taking pains and sometimes rare perseverance in controlling conditions and overcoming obstacles, and I may add, power of recovery from mistakes that sometimes require abandonment of labored results in making a new start.

4. As a compiler of the literature of a special topic in which she is interested a competent women seems almost peerless. She readily masters the methods and resources of the library, and, so far as she knows the languages, runs down even obscure and remote references, and is an excellent quoter and digester of opinions and results. She loves to cite authorities and collect and mass references, and even to make bibliographies.

5. In education, while I cannot think of any pedagogic treatise of great value yet published by a woman except in the kindergarten, she has a rare genius for teaching young children, and I am often impressed with the fact that many of the great authorities in the history of education owe the methods which they have formulated to her initiation. They devise modes of approaching the youthful mind and of instilling knowledge into it, without knowing the value of their discoveries which men have appreciated and set forth. Indeed, woman is here almost a creative genius, and the best the male pedagogue can do is to watch her ways and devices as he observes the great phenomena of nature, and then objectify, systematize, and record them. As the teaching of the young is rapidly falling into her hands throughout the world, it seems only common-sense that every university should do something to improve the quality of her work and to supplement her intuitive tact and taste by all available knowledge. That so many universities still do so little to develop this talent, now of such growing importance for all civilizations, seems a point against which the feminists might with most strategic wisdom focus their attacks.

There is also a subtle mental stimulus of each sex by the other which, although still perhaps most felt by women, is a resource in this field which we have yet to learn to use wisely. This is often seen in the case of married students whose graduate wives reinforce and supplement their work, or in rarer cases do the best part of it themselves. Although marriage of intellectual counterparts may not be its highest ideal it certainly is becoming more common and has in some conspicuous and in many less-known cases aided the progress of science. There are husbands who both consciously and unconsciously owe the best they have done to the women who have wrought with them at every step, and for those who want this kind of a wife she should be available.

I have no right to speak of other departments, but we all know that in many educational institutions girls gravitate toward some subjects which boys tend to leave, and *vice versa*; that girls often have rare gifts for literature, for language and expression, for arts and even mathematics, while very few excel in science. Why is this subject so tabooed that we cannot have as free and frank expressions of opinion as mine from many representatives of all departments; opinions that do not merely affirm the old identity theory

of no sex in mind, but that bring out the more recondite but no less real differences, for it is these that are now in order? That no college for the education of girls or for coeducation, save only Chicago which not only deserves great praise therefor but has probably marked an epoch, has made any study of this problem on which so many valuable data are going to waste, seems to me at least strange. On the negro question there were also long too hostile views; one that the black man was inferior and by his very nature servile, and the other that he was or must be made the political and even social equal of the white man. The genius or common-sense of Booker Washington has changed the whole basis of this discussion and the lines of division, and found a new solution by the study of the negro nature, needs, and the situation. So of woman, the inferiority *versus* the identity theory so long opposed must now be superseded by a new educational policy based upon natural differences. The day of the professor who has taught both sexes together and with no discrimination for twenty years, and who gravely rises to testify that he sees no difference, is past. Now that woman has won in the thirty years' war for equal opportunity sex should be no longer a sect.

The differentiation is in every tissue, organ, and faculty. She is more conservative, less diverse from other members of her sex than man, less prone to deformity of body and to specialization of mental activity, less disposed to every vice save ruse and deception, and to every crime save infanticide. Her altruism and self-consciousness always incline her to overdo and to take out of her system more than it can bear to bear. The present approximation of matter and methods of work in high school and college has at least certain elements of degeneration for both sexes. It repels boys from the upper high-school grades and from certain college classes and virifies the tastes and ideals of girls, many of whom wish they had been born boys, when our need is to push sex distinctions to the uttermost and make man ever more manly and woman more womanly. But just in proportion as we learn what she can best do and how, and what not, both she and the higher education will gain far more than they will lose, and the present danger of unsexing herself to enter the higher grades will diminish.

Perhaps the gravest danger of our American system of higher education is revealed in the fact, as shown in detail by a pamphlet in my hand, that twenty years after graduation about one-half of the college girls of three women's colleges and about one-fourth of the graduates of nine eastern colleges for men are unmarried, few marry later than twenty years after graduation, and that those who do marry have but two children per marriage and less than three per parent. Now if civilization is man's self-domestication and higher education is its acme, why should not the test of fertility also apply to it as well as to domestication, and if our academic youth and maidens are God's chosen ones why should not the Abrahamic promise of fecundity apply to them if they keep covenant with their own nature? Are we not losing our labor if the educational classes are plowed under as at present, and culture is not transmuted into that most ancient form of wealth and worth, heredity? Nothing that is not so completely assimilated that it affects the

unborn is completely acquired, and any education that develops progressive sterility or race suicide is a failure. At present our higher education would soon depopulate the country if it became universal. If there is any truth in the old saw of Huxley that an ounce of heredity is worth a ton of education, it follows that if our academic culture makes the supreme joy of parenthood less ardently craved or makes it less effective, it is already biologically bankrupt. Thus, as this evil is worse with woman, and as man unaided by her can never hope to solve all the problems of her sex, another argument for the very highest education of the few best women is that thus, somehow and somewhere, one may arise who will find out the new and better way.

DISCUSSION OF PAPER ON COINSTRUCTION IN GRADUATE SCHOOLS

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. WEST: I am surprised that neither of the gentlemen have touched upon the question of the admission of men into the graduate schools of women's colleges. Very little recognition is given to the fact that they are the only places—except in the University I represent—where that coinstruction is not carried out in the graduate schools.

MR. MUNROE SMITH: As the first paper alluded to conditions in Columbia, and as the writer seemed to have some difficulty in reconciling the statements received by him, I may say for information that the existing state of things is this: Women are not admitted to any of the professional schools at Columbia which are controlled entirely by the Columbia trustees. They could not be admitted to the Medical Department of the University simply by the action of the trustees, for the reason that when the Medical School ceased to be a proprietary school and surrendered its property to the University, two rights were reserved by the medical faculty—the right of nomination to the faculty itself, and the right of determining whether or not women should be admitted. Consequently women could not be admitted to the Medical Department of Columbia University except by the concurrent action of the trustees of Columbia and of the medical faculty. At the same time there are two affiliated, or federated, professional schools in our system, to which women are admitted. They are the Teachers College, which we regard as a professional school, and the College of Pharmacy. But of the professional schools wholly under the jurisdiction of Columbia, none is open to women.

On the other hand, as far back as 1891, the trustees voted that any course in any of the non-professional graduate schools might be opened to women with the consent of the president and of the instructor concerned. As perhaps some of you know, our Graduate Department is divided into three schools—philosophy, pure (natural) science, and political science. At the time this trustee resolution was passed there was no graduate school of pure science, and the resolution referred only to the schools of philosophy and political science. Subsequently, when the school of pure science was established, the trustees gave the same authorization there. Consequently the status of women at present is this: The trustees permit them to be admitted to all the non-professional graduate work, but the trustees do not force any instructor to open his courses. And since that, by virtue of an agreement between Barnard College and the University, there has been a further qualification of the rights of women. That is to say, women are not to be admitted without

the consent of the faculty concerned. Consequently, for the admission of women into these non-professional courses it is necessary that the faculty concerned shall authorize the opening of the courses; that the instructor concerned shall open his courses; and that the president of the university shall give his approval.

Now, as a matter of fact, after some hesitation in the cases of political science and pure science, all the faculties engaged in graduate work at Columbia have authorized the admission of women, and most of the single professors have done so. I believe there are some laboratory courses in pure science not open to women. There are very few courses in philosophy and letters that are not open to them. In political science one branch has been kept closed, namely, public law and jurisprudence. The work in this branch is very intimately connected with the Law School, and as women are not admitted to the Law School, it does not seem desirable to admit them to the public law courses. Consequently women are at present admitted to all the economic and historical courses, but not to the public law and jurisprudence courses.

As I look back on the history of the opening of the graduate work of Columbia to women, it seems to me that the whole question was determined by economic considerations. I do not think there was a positive desire on the part of a majority of the teaching force that women should be admitted to coinstruction, but there was a feeling that women ought to have a chance and that it was impossible to duplicate real university work.

I cannot contribute anything from my personal experience to the questions under discussion, because I have had no women students. At the same time, there has been considerable exchange of views among the members of the graduate faculties, and those of us who are not teaching graduate women have heard the views of those who are teaching them.

Now, as to the attitude of the men who are actually engaged in such work, which is usually stated much more frankly, of course, in confidential, private conversation than in a written and permanent form, there is a very strong undercurrent of feeling very much in the line of some of Mr. Stanley Hall's suggestions. Some men who are teaching graduate men and women at Columbia have had previous experience in women's colleges—experience in graduate work as well as undergraduate. What these men seem to be coming to think more and more is this: That it is probably a misfortune that the training of women is modeled so closely and strictly upon that given to men—a misfortune for the women themselves. Most of these men seem to believe, as Mr. Stanley Hall has suggested, that there are certain fields in which some women can do better work—possibly even better research work—than men; and they seem to feel that it is a pity that not only the collegiate but the university instruction of women should not be so modified as to bring out and develop the special faculties which seem to be more feminine than masculine. Most of them have the feeling that there are such faculties. As to what they are, few of them will speak with any definiteness. The matter, in their minds, is one that needs investigation by continued experiment.

It seems to me that these views are based upon assumptions which are probably correct. It seems to me that the weakness of the whole feminist movement, from the higher education to the woman suffrage movement, lies in the assumption that feminine differences are inferiorities, and that women are to be improved by treating them, as far as possible, like men. That, it seems to me, is wrong. It seems to me that civilization began with, and has advanced by, differentiation of men's and women's activities. In the savage races men and women are much more alike, largely

because they do much the same things. You find women engaged not only in agriculture, but also in fighting. Instances of that are to be found from the Amazons down to Dahomey. With increasing differentiation of work, there has been an increasing differentiation of physical and mental characteristics. I think that every unbiased person admits that there are mental differences. I do not know that I ever heard them more sharply defined than by Doctor Mary Putnam Jacobi. In a public address delivered some years ago in New York, Dr. Jacobi said that the feminine mind is distinguished from the masculine mind by superficiality, discursiveness, and a purely personal view of things. Then she went on to say that these qualities were just as valuable as the opposite qualities in man; that superficiality meant close attention to the outside of things, which is just as important as the inside; that discursiveness meant capacity to think of many things at the same time, which is the very basis of what we call executive ability; and that the personal view of things is quite as important as the abstract, since this world would be a very cheerless place if nobody took the personal view.

Now, if women have different capacities from those of men, and if, as I believe, they have higher capacities in certain directions, it should be the object of the higher education of women to develop these higher capacities; to find out the things they can do, not merely as well as but better than men. It seems to me that the process of putting women through exactly the same educational machinery as men not only will not tend to help us to discover these capacities, but rather to retard any such discovery.

I think it is very fortunate, therefore, that college education of women is being separated from that of men, and I think it would be most fortunate if a great university that should be open to women only could be endowed on a scale to secure the best teaching talent. I should like, further, in such a university to see chairs filled by men only so long as no women could be found capable of filling them. I should like to see the experiment of graduate work for women conducted exclusively by women. But at the present time such an experiment is probably impossible, because of the impossibility of obtaining adequate endowment.

For the present it is of first importance that the men who are conducting the graduate work of women should try to find out whether there are things that women can do better than men. I have asked some of my colleagues about this, and I have found a general feeling among the persons engaged in advanced work in literature that women seem to be especially capable there; that some of them seem to have very fine critical appreciation. The only criticism I have heard upon the work of women in this field is that they are partisans. One of our professors of literature said that he found that even advanced women graduates, when they like an author, dislike very much to admit that there are any defects in his literary style or any unpleasant traits in his personal character. That, of course, is an illustration of Dr. Jacobi's statement that the feminine view has an attractive personal quality which the masculine view lacks.

MR. PAGE: Like Mr. West I am not able to add anything from my personal experience to this discussion. Yet although Virginia has never yet admitted women, I believe that the time is gradually approaching when they will be admitted in small numbers to graduate work. There has recently been a considerable revolution of sentiment among the faculty, a good many new members being decidedly in favor of this course.

MR. WELCH: I do not think we are prepared to draw any far-reaching conclusions from our experience with coeducation at the Johns Hopkins Medical School. It was not in the first

instance the free choice of our faculty to adopt coeducation in medicine. The alternative was placed before us of accepting an endowment on the condition of having coeducation, or of not having a medical school at all. We, of course, decided to found the medical school on this coeducational basis. Many of us anticipated great difficulties and embarrassments. Nevertheless, they have not presented themselves, and I suppose if today it were a matter of absolutely free choice with us we would not hesitate to continue the present system.

Our conditions require that we shall give the same courses, that the instruction shall be identical for men and for women. There are no separate courses for women, but they do not take that in male genito-urinary diseases, although permitted to do so. But it is unwarranted to draw any very general conclusion from our experience because, first, we have an exceptional group of women, in consequence of our standards for admission; not only a Bachelor's degree, but a specified practical training in certain premedical sciences being required. And secondly, while the medical school has grown rapidly and largely, the percentage of women has not increased and remains small.

With regard to the fitness of women for the study of medicine, Mr. Hall's position would be supported in general by medical opinion; differences of sex are not merely physical, but mental as well. Nevertheless, among the women students there have been some as good as the best of the men. I do not think that the present opportunities afford women the chances of distinction open to men. Very few hospital positions are open to women after graduation. In the pursuit of the more scientific branches women can serve for a while as junior assistants in laboratory work, but it can scarcely be said that at present an academic career in medicine is open to them. While there may be a difference in capacity, there are just as capable women doctors as men, but they have not now the same chance to obtain distinction in practice or in scientific pursuit along medical lines.

MR. CRANE: Construction in medicine is a separate matter, it seems to me, turning on things quite different from those that affect the central part of the discussion. The objections pointed out in connection with professional schools having a fixed curriculum are minimized in the ordinary graduate instruction of men and women. Such work is largely personal, and although men and women may be associated in it, I do not think that the strict, uniform standards of the man must, without any consideration of the differences of sex, apply to the women.

MR. VAN HISE: As at Chicago, the results of our granting fellowships to the women have not been satisfactory, so far as productive work is concerned. The capacity for constant intellectual effort along one definite line seems to me a very uncommon quality to find in women. (We know it is an uncommon quality in man.) While I would not curtail or refuse to admit women in the graduate schools, I do not expect proportionate results from their work.

THE CHAIRMAN: What is the effect upon the character of instruction of the influx of a large number of graduate women in a class?

MR. CARVER: In an undergraduate college where I taught for six years, the proportion of women to men in my classes was generally about one to four, and I do not think that their presence in any way lowered the standard of work. It was necessary, however, to adopt a somewhat different standard in marking, for I was never able to invent an examination paper which, judged solely as a paper, the women would not on the average pass better than the men; not that they knew more about it than the men, but that they seemed to specialize better and make better papers. So I

adopted the policy of marking their papers a little more severely than those of the men, and told them so frankly. In reply to complaints I said: "I am trying to mark your work in the course, and I don't think the examination is a complete test." This is perhaps one of the differences between the sexes which Mr. Hall has mentioned; the women seem to care more for the grade and for a degree. As to their ability to learn in the field of economics, I could not see that there was any difference in undergraduate work.

MR. SMALL: For eleven years I taught mixed classes, and I noticed that women who had, up to the Senior class, ranked first were just beginning to fall back; by that time their studies were beginning to call for critical capacity rather than memorizing. In the graduate school for thirteen years I have had 5 per cent., on an average, of women in my classes. In order to arouse criticism in their minds it has invariably been necessary to approach nearer to the point of absurdity in stating propositions than in the case of men. I have never found any difficulty in getting the men to find opportunities, but it is a very rare occurrence for a woman to venture, to challenge the statement of the professor. The possible influence of the presence of women in our courses to a degree that would influence graduate instruction is a contingency not yet in sight. Women in equal numbers might change the quality of the instruction, or the manner or attitude of the instructor, but in my experience, with only 5 to 10 per cent., their influence is zero.

MR. STRINGHAM: Some of our professors have gone so far as to divide their classes into two groups, placing the young women in one group, the young men in another, preferring to repeat the work of a graduate seminary, on the ground that it is desirable to present the subject differently to the different sexes. Personally I have not found this necessary, but in our graduate work in mathematics the proportion of women is very small. In several departments I think there is a tendency for the women and the men to separate voluntarily by electing different courses. We are not forcing a solution of this problem in California, and it is too early for us to draw any very definite conclusions.

MR. CARVER: Does Mr. Small find a real difference in critical ability, or is it a difference in pugnacity? I seemed to find that if the women knew you wanted them to show a critical attitude, or if it were necessary to show a critical attitude to get good grades, they would show it. They do not like to show pugnacity or combativeness. They prefer, unless they find out you want them to do otherwise, to accept what you say.

MR. SMALL: My judgment is it is both the unwillingness to be pugnacious and the difficulty of doing thoroughly objective critical work. I have in mind a recent case in which a very well-trained woman has been struggling with a criticism of a very dear friend of hers. The man is evidently in the wrong, but the woman is unable to detach herself from the personal point of view. And that is, I think, a difficulty that women always experience.

MR. CARVER: In the question of scientific analysis with no personal element entering do you find the same thing?

MR. SMALL: I think there is a difference of ability, but I would not claim that my basis of induction is a sufficient one.

MR. HALL: In the correspondence regarding this question several people express the opinion that in the colleges at least, and perhaps in universities, women, although taking the higher

education or the highest education, had not sufficient depth of interest; that their minds were so conventionalized, perhaps by nature, that they strove for success for its conventional effect rather than for their general interest in the studies themselves; that real scientific interest did not exist. One writer excepted literature and art, and perhaps one or two other things. One or two wrote that wherever the instruction was largely with books or requiring reproduction or assimilation, there women generally did excellently, but the moment they were thrown upon their own resources, either in elementary or advanced work, and asked questions with no authorities given, there they always fail. There were strong expressions in these letters to the effect that this question, one where education has to do with general principles of biology and life, ought to be studied and ventilated with great care. We ought to know whom we are training, and whether we are spoiling a mother to make a good specialist.

MR. CARVER: Returning to this subject of originality: I went into the teaching of coeducational classes believing that women did lack originality and the ability to work out problems for themselves; but I have been forced to the conviction that we have simply been saying that over and over until we believe it. My experience is that a woman, if she is expected to show originality, will show it. She will do it if she has the necessity to do it.

MR. CUBBERLEY: The question seems, so far as my experience goes, to be largely an individual one. There are departments with us which have hardly any women as major students, while on the other hand certain other departments have scarcely any men. Changes in department heads or department policy have in a few cases materially changed the proportions of the two sexes enrolled in them. With a free elective system the personality and the teaching power of a department head is a factor that cannot be disregarded. My experience is that the best and the worst students I get are men, the women staying nearer, though rather above, the normal type. Women seem less willing to do advanced work, or to go ahead and try to do a thing better than someone else has done it. I get better results with women, I think, when I outline a definite piece of work to be done.

THE FOURTH SESSION

THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN STATE UNIVERSITIES

PAPER PRESENTED BY CHARLES R. VAN HISE, OF THE UNIVERSITY OF WISCONSIN

If I were categorically to answer the question, What are the opportunities for higher instruction and research in state universities? the reply would be somewhat as follows: The opportunities for higher instruction and research in some state universities are as great as in the average of private institutions of similar incomes. But this answer would represent my personal view merely, and therefore needs support. The question under consideration may be discussed from two points of view—the present opportunities for advanced instruction and research in state universities, and the probable future opportunities.

With reference to present, but especially with reference to future, opportunities the states should be divided into two groups—those in which the state funds for collegiate and

university education are united, and those in which they are divided. Belonging to the first group, among others, are, California, Illinois, Minnesota, Nebraska, and Wisconsin. The states of the second group are much more numerous. In many of the northern and western states the state grants are divided between two or three institutions. In a number of the southern states the funds are still further divided because of the separate provisions for the education of the whites and blacks. The most notable of the state universities in states where there is division of state funds is Michigan. But this university gained a dominant position in the state before the Agricultural and Mining Schools became important, and hence has an exceptional position among the institutions in states of the second group. The problem of advanced instruction and research in state universities is in general very much less difficult in the states where all of the higher educational interests of the state are united than in those states where the funds are divided. But I have no doubt that even in the latter group of states a number of state universities will in the future gain predominant positions in their respective states similar to that held by Michigan.

The state universities began as small teaching colleges, as did the universities of the East, members of this Association, with two exceptions. Many of the state universities, and especially those in the newer and less-developed states, are still in this condition. As the state universities in the wealthier and older states of the Middle West and in California became somewhat more prosperous they, like the universities of the East at a similar stage of growth, began to do advanced work. At the present time most of the departments in the colleges of liberal arts of the larger state universities are attempting to do such work.

While in general research work was not undertaken at the outset by the state universities, an exception should be made with reference to some of the colleges of agriculture, which are integral parts of state universities. As a result of the Hatch Act, a number of these colleges are fortunate in having a special fund of fifteen thousand dollars per annum for investigation. When this fund was granted some of these colleges of agriculture had almost no instructional work to perform. Thus it happened that in a number of state universities the colleges of agriculture were the earliest to engage to an important extent in research work. Indeed for a time this was their chief function.

As yet the colleges of engineering are somewhat behind the colleges of liberal arts and the colleges of agriculture in the development of advanced instruction and research, but recently certain of these colleges, notably those of Illinois and the State College of Iowa, have received appropriations from their states for the purpose of investigation. In other colleges of engineering where such appropriations have not been made, investigations have been carried on to a varying extent, and in some of them important work has been done.

The incomes of the state universities are in large part given without restriction as to division between instruction and productive scholarship. In this respect I suspect the funds are as free from restriction upon the average as in private institutions. Whether

the annual state grants shall go for instruction or for research is in most cases a matter which the governing bodies of the universities decide.

The power of state universities to do productive work is often underestimated because they have no large endowments. A fair way to compare this power with that of private institutions is upon the basis of income. Michigan, California, Illinois, and Wisconsin each had an income for the year 1903-4 of between seven hundred and fifty thousand and nine hundred and fifty thousand dollars. Iowa, Minnesota, Missouri, Nebraska, and Ohio, each had an income between four hundred thousand and six hundred thousand dollars. Of these incomes the larger portions are directly from the states. Smaller amounts are from the United States and from the interest upon invested funds. The totals of the continuing incomes from these sources vary from about six-tenths to about nine-tenths of the entire incomes of the institutions named. If one were to capitalize these permanent continuing incomes at 4 per cent. they would be equivalent, for the first group, to endowments ranging between ten millions and twenty millions of dollars, and for the second group between six millions and ten millions of dollars.

But it may be said that state universities are uncertain as to the continuance of their incomes. This view is not substantiated by the facts. I do not know of any important state university which within the past score of years has had a permanent setback or large reduction of its income. On the contrary, during this period the incomes from the states to nearly all of the important state universities have been increased in amount annually or biennially. Some of the state universities are supported by a direct tax, varying in amount from fifteen-hundredths of a mill to a mill. Other state universities have continuing annual appropriations which are added to at almost every session of the legislature. The incomes of others are appropriated annually or biennially. As illustrative of the situation among the institutions above named, it may be said that the legislatures of 1903 made largely increased appropriations for Illinois, California, Iowa, Minnesota, Missouri, and Wisconsin. It may further be said that in Wisconsin there has been no session of the legislature during the past fifteen years in which the University has not received either an increase in income or a special appropriation, or both. Indeed at most of the larger and at some of the smaller state universities it is taken for granted that each legislature will make some additional appropriation for the university. In a number of states where this is not true the universities have, as already noted, direct taxes for their support, which give increases of income from time to time because of the increases in the assessed valuation of the property of the states. Usually at any session of the legislature the only question at the larger state universities is not whether the support of the past will be continued, but how much the appropriation will be increased. At Wisconsin, in the year 1903, the permanent increase in income was placed at forty-eight thousand five hundred dollars per annum, and an additional special appropriation of two hundred thousand dollars was made. And this institution by no means furnishes the case of the largest increase in appropriations for that year.

The present comparative financial prosperity of the larger state universities has been attained within the past score of years, and the greatest advance has been within the past dozen years. The total of the incomes of the state universities having incomes varying from four hundred thousand to more than nine hundred and fifty thousand dollars per annum, namely, California, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, has doubled from the year 1898-99 to the year 1903-4, that is, in five years. If the total of the amounts appropriated by the states to these institutions for 1898-99 be compared with that for 1903-4, the latter amount is found to be two and one-half times the former.¹ The period of rapid expansion is apparently nowhere near its climax. Before a decade shall have gone by, it is certain that each of several state universities will have an annual income of more than a million dollars.

But it may be said that the amount of income does not determine the opportunities for advanced instruction and for investigation at state universities. It is therefore necessary to supplement the information as to incomes by definite statements upon these points. I am not sufficiently familiar with the conditions in the state universities to make general statements as to the opportunities for productive work, and therefore am obliged to give the facts at Wisconsin, with the belief that the situation there is very similar to that which obtains at several other state universities.

In dealing with the opportunities for higher instruction and research it is customary to give the material facilities offered for such work. If one were to consider merely this point of view, from the catalogs and various publications of the state universities it would be easy to show that several of them have ample material facilities, including laboratories, observatories, and libraries, to carry on advanced and investigative work in many lines.

But it seems to me that a better test upon the questions at issue than the material facilities is the character of the men who comprise the faculties of the institutions, and the spirit which obtains among them. There are various points of view from which the faculties might be considered with reference to advanced instruction and investigation. Among these are the basis upon which appointments to the faculty are made, the amount of instructional work demanded of the professors, and the productive capacity of the men themselves.

Upon the first point it may be said at Wisconsin it is the announced policy that in making appointments and promotions two qualifications only are considered—productive scholarship and capacity for efficient instruction. While there is an attempt to secure both in each new appointee, it is not too much to say that a man can hardly expect to get an appointment of a higher grade than instructor upon his record as a teacher alone.

If nearly the entire energy of the faculty be required for elementary instructional work, it is plain that individual attention cannot be given to advanced students, and that a faculty

¹ The above comparisons are based upon figures obtained from the *Report of the Commissioner of Education* for the year 1898-99, and from a recently published statement by the National Association of State Universities for the year 1903-4. Since the figures are from different sources, it may be that they are not comparable. If this be so, the statements made may require modification.

composed of men of whom such demands are made has not a surplus of energy to devote to research. At Wisconsin there is no fixed amount of instructional work required from a professor. The quantity of this work varies greatly. Where in the faculty there is a man who is not a productive scholar, he is likely to have rather heavy instructional work. Where, upon the other hand, there is a man who is doing things, he has large liberty as to the amount of instructional work which he carries, but some of the men who are intellectually fruitful do much administrative and instructional work.

Upon the whole it seems to me that the surest test of the opportunities for advanced instruction and research in a university is afforded by the amount of productive work which the instructional force itself is doing. A faculty pervaded by the spirit of research gives the atmosphere necessary for higher instruction. To such an atmosphere graduate students will be drawn. In such an atmosphere scholars and investigators will be produced. With this belief in mind I have asked the members of the instructional force of the University of Wisconsin to give information concerning the investigations which they have made during the time they have been at that institution, and also a statement of the researches upon which they are now engaged. In most cases the replies are sufficiently full to afford an approximate judgment of the importance of the work done. The answers show that the men reporting have produced a formidable list of works, from small studies to elaborate treatises. Of course, a large number of textbooks have appeared, but these are not considered in this connection. The answers show that at the present time about one hundred and thirty-five, somewhat less than two-thirds of the faculty, are engaged in productive work of some kind. About ninety of these may be called minor and about forty may be called major investigations. In making this discrimination I have regarded the minor investigations as those in which series of papers concerning disconnected subjects have been published, and have regarded the major investigations as those in which a general line of work has been followed continuously for a considerable period of time. Thus men are placed among the minor investigators who give lists of many published papers, while other men are placed among the major investigators who as yet have not published more than two or three pieces of work. Among the studies and investigations which are ranked as major the larger part are of moderate importance. A few are large studies which have extended through several to many years and the results of which mark them as important contributions to knowledge.

The information furnished seems to be adequate evidence that at the present time a sufficient number of men are engaged in higher instruction and research at Wisconsin to give a favorable environment for such work. But this general statement required some qualification when applied to the individual departments. In many of the departments of instruction it is entirely true, but in others we must unfortunately admit that the task of raising them to the university plane largely remains to be accomplished.

I shall not compare the situation at Wisconsin with that at other state universities. I believe that substantially the same situation obtains at some of them, whether upon the

whole more or less favorable than at Wisconsin I am unable to state. At many of the younger and smaller state universities a long road must be traveled before they reach the present condition of the more developed of their sisters. But this is no more than should be expected. Nor is it surprising that even the more highly developed state universities at the present time are not doing as much advanced work as the more powerful of the older private institutions. With the exception of Virginia, the stronger state universities are very young as compared with the universities of the East, which began as colleges and have developed into universities. Michigan and Wisconsin have had their jubilees, but the event is yet to come to California, and the greater number of larger state universities. Eastern universities, such as Harvard, Yale, Columbia, Princeton, and Pennsylvania, vary from one hundred and fifty to more than two hundred and fifty years old, and hence are from three to five times as old as the strong state universities, with the exception of Virginia. But even in the older universities of the East there was little money available for the systematic encouragement of advanced instruction and research until about a quarter of a century ago, and the oldest of the great private foundations of recent years, such as Hopkins, Clark, Chicago, and Stanford, was established but thirty years ago. Thus it is clear that the great growth in advanced instruction and in research in all the universities of the United States has taken place almost wholly within the past thirty years. It is therefore not surprising that it is scarcely a score of years since the young state universities began to develop those lines of work vigorously.

So much for the present opportunities for advanced instruction and research in the state universities. In many respects the subject is even more interesting with reference to the future. During the past quarter of a century I have seen Wisconsin change from a small college to its present condition of comparative prosperity. During the same period similar transformations have taken place in a number of state universities. I believe present accomplishments to be the mere beginnings of the development of advanced instruction and research in state institutions. I expect to see these lines of work continue to expand until state universities in this country are doing the work for their respective states that the state universities of Germany are doing for the states of that empire. I am aware that there has been general disbelief upon this point in the past. I know that in many sections of the country the conviction is still widely held that the people will not tax themselves for work of university grade. I know that men may be found in the faculties of the state universities who hold this view. They may be found among the presidents of the group of larger state universities. But it seems to me that the facts of the development during the past twenty-five years clearly show those who hold this view, to be wrong. Already in a number of states, the people *are* taxing themselves to support advanced instruction and research. Furthermore, and this is most important, in those institutions in which the most advanced stand has been taken with reference to high-grade work there is little or no objection to the movement. To illustrate: At Wisconsin I have had no criticism of the departments where there are several strong men who are doing productive work. The

complaints which have come to me have been in reference to those departments where lack of funds or lack of courage on the part of the administration has prevented their advancement to a higher plane.

But suppose I am wrong in reference to the support by the state of advanced instruction and research. Still the question as to the place which these higher lines of work are to take in the state universities is open. Why should not a state university receive help from private funds for such purposes as well as other universities? No good reason can be assigned for the belief that state universities in the future will not receive liberal support from private funds. It is true that in the past this has not been the case, but the same was also true of private institutions until very recently. As already intimated, the great sums in the United States for advanced work in private institutions have been given within the past thirty years.

When the alumni of the state universities become numerous and some of them wealthy, why should they not give to these institutions as do the alumni of private universities? Indeed if there be any difference between the two, it should be in favor of the state institutions, for the men who have obtained their education at such universities have returned a considerably smaller proportion of its cost in fees than have those educated in private institutions. I hold the conviction firmly that in the future the alumni of state universities will give liberally to their support.

Nor do I believe that the gifts to state institutions will be derived from alumni alone. What valid reason can be assigned for the belief that the men who have gained their wealth by taking advantage of the natural resources of the states will not turn back some portion of this wealth for higher education? Indeed this has already begun. It is only within the past score of years in the middle and far West that we have seen large accumulations of capital, and have had the feeling of assured prosperity. Now that this situation has come about, gifts from private sources have begun to flow to the state universities. The largest recipient has been the University of California. Wisconsin and other state universities have received smaller amounts.

In the past many of the men who have given money to educational institutions have been inspired by a religious motive. But in the United States at present there are a large number of men of wealth who are moved by the educational or ethical impulse, and who are not impelled by the religious motive. In the future such men I doubt not will give largely to state universities. To such persons it can be made clear that a state is at least as safe a trustee as any individual or corporation. The wealth of the people of an entire state is surety for such funds.

In conclusion, therefore, I hold that in the future the state universities will be in a much stronger position with reference to advanced instruction and research than at present. The state universities have an official hold upon their respective states. The states have a pride in them as their institutions. In each of a number of states the feeling is very general among the people, as well as the alumni, that their university must be developed to

as high a plane as any private institution. This hold upon the state already secured by a number of the larger state universities is yet to be gained by others. Where this position has been attained there is no reason to believe that it will ever be lost. As already pointed out a number of states are now granting large sums of money to their universities for advanced instruction and research. It is my deep-seated conviction that state funds for such purposes are sure to increase greatly in amount. And in addition to the certain support by the state of productive scholarship, the state universities in the future have at least an equal right with private institutions to expect assistance from their alumni. Finally, the state universities may reasonably expect funds from wealthy men, not alumni, inspired by ethical and educational motives.

Therefore, it seems to me my initial proposition that the opportunities for higher instruction and research in some state universities are as great as in the average of private institutions of similar incomes, is conservative. Further, in the future these opportunities are certain to be rapidly improved and extended.

THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN STATE UNIVERSITIES

PAPER PRESENTED BY JAMES MORRIS PAGE, OF THE UNIVERSITY OF VIRGINIA

It would be a work of pure supererogation for me to make any argument before this body with a view to showing that the intellectual and material development of a country depends to a large extent upon the quality and amount of the higher instruction and research carried on by the higher institutions of learning of that country. Granted that it is axiomatic that each state should have at least one strong institution for the higher instruction, it follows necessarily that in most of the states of the Union this work, to be done at all, must be done at the state university. Especially is this true of the southern and western states, where there are comparatively few private institutions of any strength.

The question has been raised, occasionally, of the propriety of expending, for higher instruction and research at the state university, money collected by taxing the people of the state. This, again, does not appear to me to be a debatable question. If we admit, as we have admitted, that it is proper to tax the people of a state to support common schools—or even to support the state government itself—we have to admit that money collected by taxation may properly be expended for higher instruction and research. In fact as it is the function of the state university to supply *general* rather than local needs, and as any individual common school can supply the needs only of the community in which it is located, it would seem clear that the state university is more properly the beneficiary of funds raised by general taxation than is the common school. Research being essential to the progress of civilization, both on the ideal and on the material side, the state cannot afford to leave it to the chances of private benefactions on the fallacious suppo-

sition that such work should be supported by charity. One of the principal objects of research is the investigation of practical problems nearly touching the life of the people, problems of an industrial, sociological, and political nature. The results of research are common property, the poorest and most illiterate reaping the benefits of the discoveries of a Koch, a Virchow, a Pasteur, a Reed, or of any important scientific discovery.

The encouragement of higher instruction and research by subsidies from the government is no new policy. Every enlightened state, whether ancient or modern, has pursued this policy to a greater or less extent. Moreover, in Germany and France, to cite concrete examples, this kind of work has long been supported by the government, in part or in whole, and we note with pleasure that the more popular the form of government of those countries becomes, the more liberally do they appropriate from the public funds for the higher education. A glance at the history of Germany for the last two generations would convince the most skeptical that there can be no better investment, even from the purely material standpoint, for a reasonable portion of the public funds, than in the encouragement of higher instruction and research. The cost of the investigations which have enabled Germany to compete successfully with England in the production of manufactured goods for the world's market, has been repaid to Germany a thousand fold. Moreover, the experts and specialists trained at the German universities do not form merely a small class of assumedly unpractical teachers: it is just from this class that their leaders in every practical walk of life are drawn—from the consummate statesman, who directs the imperial policy, to the expert commercial traveler, who is the best of his kind in existence. The Germans are thoroughly convinced of the fact that if the state will take care of its university, the university will take care of the state.

When my attention was first called to this subject I asked myself whether it could be possible that those in authority at any state university in this country consider higher instruction and research as not properly belonging to the functions of a state university. But replies to inquiries sent to all of the state universities showed that in no single case was higher instruction and research regarded as other than a legitimate part of the work, to be paid for by the state. Most of the heads of the state universities expressed themselves very vigorously upon the subject—some holding that this class of work is the work *par excellence* of the state university, as the undergraduate work might, at a pinch, be done at colleges. On account of location, or other circumstances, some branches of research are primarily more appropriate than others for certain institutions; but no state university, which can command the necessary means, can afford to neglect permanently any important branch of endeavor. More than half of the activities of the agricultural experiment stations are said to be devoted to research; and the standard of work done by them has been vastly improved within the last ten years.

With regard to the opportunities for higher instruction and research which exist at present in state universities, I take it that I am expected to speak principally of southern universities. I shall attempt to give some account, therefore, of what is being done in this

direction in southern state universities, prefacing what I have to say, however, with the *caution* that the information which I have been able to gather is almost certainly incomplete.

The southern states, I need hardly say, are far behind most of those of the north-central and western divisions in facilities for higher instruction. This is no doubt partly due to poverty in the South. But vastly more might be done by the southern people for their own uplift than is done. The trouble is that they have not yet realized their comparative backwardness in educational development; or that, especially for material growth, the expert or specialist is necessary. A great deal has been done of recent years to stir up the southern people to readjust and improve their common-school system, and to submit to increased taxation for this purpose. But the enthusiasts in this, in itself excellent, movement seem to have overlooked the fact that educational influences *descend* rather than ascend, and that strong state universities entail strong secondary and primary schools.

In addition to not realizing what is necessary for the development of the country through higher education, the grave error has been made in some southern states of expending the money appropriated for so-called higher education upon several state institutions—preventing any one of them from attaining the very first rank. Even Jefferson, with his immense influence, struggled in vain to introduce *system* in the educational development of Virginia; although he did convince Virginians that a state should develop intellectual resources as well as physical.

Many of the great north-central and western states have profited by the mistakes made by some of the older states in this direction. In the majority of the states west of the Alleghanies the funds appropriated for the support of higher education in the state are bestowed upon one institution—the state university: and as a rule, the state agricultural experiment station, subsidized by the United States government, is annexed to, or under the control of, the state university. We have heard of at least one case in which a middle-western state practically abandoned two of its weaker institutions in order to concentrate upon and develop a third—with admirable results. One of the most instructive phenomena in recent educational history has been the astounding growth of the Western State University—combining, as it does, the best traits of the English and German universities with a number of new ones peculiar to itself. It is to be hoped that the older southern states, where there was as much lack of system in the practical development of the educational forces of the state as there was in laying out the old cities, will profit by the example of their western neighbors—in the first place, by providing more adequate means for educational purposes; and, in the second place, by expending the money wisely and judiciously with a view to having at least one strong institution for higher instruction and research in each state.

I have tried to obtain, both by direct inquiry and by studying lists of printed publications, some definite information as to the kind and amount of higher instruction and research undertaken at the highest educational institution under state control in each of the following thirteen south-Atlantic and south-central states: Virginia, West Virginia,

North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas. At the highest state institution in each of these states what are called "graduate courses" are offered; that is, courses open only to a student who already holds a baccalaureate degree, and leading to the degree of Master of Arts. These seem to be exclusively culture-courses, more extensive in character, however, than those leading to the B.A. degree. Four of these institutions, viz., the University of Virginia, the University of West Virginia, the University of North Carolina, and the University of Mississippi also confer the degree of Doctor of Philosophy, upon the conditions usually required. With regard to the time when these four universities first conferred the Ph.D., and the number of times the degree has been conferred, I have obtained the following information:

	Ph.D. First Conferred	No. of Ph.D.'s
University of Mississippi	1877	4 in 28 years
University of North Carolina	1884	13 in 20 years
University of West Virginia	1903	1 in 2 years
University of Virginia	1885	35 in 20 years

The number of graduate students in all of these institutions forms a very small proportion of the whole number of academic students—apparently about 5 per cent. It was very difficult, however, to get accurate information about this matter, as the definition of "graduate student" varies somewhat with the institution. At the University of Virginia, for example, we list as a graduate student one who holds a baccalaureate degree, and who is pursuing graduate work in at least one subject. Quite frequently we have students, holding the B.A. degree of other institutions, who are listed as undergraduates, because they have no graduate work with us. This method of distinguishing the graduate from the undergraduate does not seem to obtain generally in the South; and in arriving at the number of graduates and undergraduates in southern institutions, I have merely counted them as listed in the catalogues, without attempting to discover the method of subdividing. According to the Report of the Commissioner of Education for 1902, the number of graduate students in all state institutions in the above thirteen states—that is, in technical schools or courses as well as in academic courses—was 2.8 per cent. of the whole number of graduate and undergraduate students in those institutions. I find from the report of 1897 that this percentage was 3.2; so that there were fewer graduate students in 1902 in comparison to the whole number of students than in 1897. This does not mean, of course, that the whole number of graduate students has decreased, but merely that the number has not grown as rapidly, relatively, as the number of undergraduate students. The number of graduate students increased by about 20 per cent.; and the undergraduates by 33½ per cent. during the period from 1897 to 1902. The same phenomenon may be observed with regard to the state institutions of the twelve north-central states: in 1902, the graduate students form 5.4 per cent. of the whole number of students, while in 1897 they form 6.8 per cent. of the whole number. This state of affairs appears to me to be temporary, and

was brought about, no doubt, by the spirit of commercialism which has swept over the country within the last few years—inducing, in the South, at least, a disproportionately large number of students to rush through a short technical course with a view to turning their modest store of information immediately into money.

We find, therefore, that provision has been made in at least one state institution, in each of the above-mentioned southern and south-central states, for graduate instruction—of a modest kind frequently—leading to the A.M. degree, while in each of four of these states, one state institution confers the Doctorate of Philosophy, and demands a dissertation representing research from the candidate for this degree.

Information with regard to the kind and amount of research actually undertaken at southern state institutions within recent years has been difficult to obtain. A certain amount of research, naturally, is carried on at each of the state agricultural experiment stations. In addition, I have learned that at the following southern universities, the results of research along the lines indicated below have been recently published:

At the University of Texas: Principally in Chemistry and Geology.

At the University of Tennessee: Principally in Chemistry and Physics.

At the University of Georgia: In Chemistry, and in the History of Georgia.

At the University of North Carolina: Principally in Chemistry, Biology, History, and English.

At the University of Virginia: To some extent in all of the schools of the Academic Department, principally, perhaps, in Chemistry, Physics, Astronomy, Mathematics, and English.

A few small appropriations have been made by the Carnegie Institution, by the National Academy of Sciences, or by the American Chemical Society, to pay for certain special research at the University of Georgia, the University of North Carolina, or the University of Virginia. At the last-named institution some research has been undertaken by members of the faculty almost from the beginning—in 1825.

The presidents of southern state universities have reported that the prospects for the development of the higher instruction and research in their institutions within the reasonably near future are uniformly bright. The Reports of the United States Commissioner of Education for 1897 and 1902 show that in that interval of five years the sum total of the incomes from all sources of the state universities in the thirteen states repeatedly mentioned was increased by about 100 per cent. This was exclusive of special benefactions. During the same interval the sum total of the incomes of all the universities and colleges, public and private, in the same thirteen states increased only about 40 per cent. This seems to show that the financial outlook for educational institutions owned and controlled by the state, is very flattering.

In considering future prospects, I see no reason to anticipate troubles of political origin for the state institutions. The terrors of this bugbear have been practically done away with. There is no surer way for the practical politician to commit political suicide

than to tamper with the public schools, the principal one of which is the state university. There is no reason to dread an instability or narrowing of plans and purposes on account of state control. I know of no case in which a projected educational expansion had to be given up on account of the state's withdrawing her promised support. All institutions are liable to financial loss; and state institutions are rather less so, I think, than private ones.

The people of the great West are practically unanimous in favoring strong support for their state universities. The people of the South will be forced to follow their example—if for no other reason, in order to bring about the great material uplift which they are confidently expecting. Germany has one institution for higher instruction for every 2,000,000 inhabitants, approximately. Few of our southern states have 2,000,000 inhabitants—and they are burdened with the negro. But southern people are not content to lag at the rear of the procession, when they have realized that that is their position; and I confidently predict that within a few decades there will be in each of the larger southern states a strong state university, repaying a thousand fold the liberal bounty of the state.

DISCUSSION OF THE OPPORTUNITIES FOR HIGHER INSTRUCTION AND RESEARCH IN STATE UNIVERSITIES

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. HALL: It seems to me we have to look forward to a change somewhat similar to that taking place in secondary education. For instance, in New England there was a time when pretty nearly all the secondary education was in the hands of endowed schools—the old academies. When the larger municipalities began to establish high schools there was a great deal of controversy, because this would hurt the old academies. It was said that the people should not be taxed to educate for the higher education, as that was called. And now those of us who represent the old endowed institutions have to look forward with such philosophical equanimity as we can muster to a time when the same thing is going to take place in the college and university grades; to the day when the proud eastern endowed college is going to pale before the glory of these great state universities. With regard to Mr. Van Hise's opinion that state universities are as likely to attract private endowments as the eastern institutions; we are in the habit of thinking that because in Germany and France private munificence is very rare that that is likely to be the case here; but this need not be the case. Three, at least, of the large universities of the East have shown considerable concern about the shrinkage in the area of supply for their students. The geographical map shows that they are becoming local institutions. Finally there must be some caution in drawing inferences about research from the state systems of Europe, especially Germany, and the state universities. The latter are supported by the states, because the great reinforcement has come in support of agriculture and similar practical interests, and the research must be primarily of that character. The German institutions were established and are supported on a different basis; to express the national spirit and also to reinforce the vast body of civil service. They are as careful about these old questions of the humanities, and the like, as our largest endowed institutions.

In this association we need a definition as to just what research means. The feeling of twenty-five years ago that a university was a place where uselessness was a little at a premium, and that there was a danger of soiling the pure love of knowledge if utilities were in sight, is now giving away to that other feeling that the best sort of research is going to be that which is applied, and that the usefulness of a discovery is the best and most legitimate motive for the investigator of the future. He is not to be a mere money-maker, a mere applier of other people's discoveries, but he is to find a legitimate inception in his work that is going to make its scientific value greater, from the fact that it is to be used to uplift the race in some way. If this is so, it makes the problem of the universities that are educating for research a very serious one for the future of the old endowed institutions.

MR. CARVER: With regard to the probable future of the state universities of the West as compared with the endowed institutions of the East, there is possibly a natural corrective which will prevent the endowed institution from taking a secondary position, one which seems to be already showing itself as between the public high schools and the private academies. That is the growing effeminization of the public high school, which is beginning already to occasion a renewed interest in the endowed academies. Parents frequently prefer to send their boys to endowed academies rather than to have one or two boys in a large class of girls in the high school. I should not be surprised if in twenty-five years, or at most fifty years, we would find in all the strictly coeducational institutions about the same proportion between men and women as that which we now find in the public high schools. The endowed institutions are as yet, and probably will be for some time, in a position to deal with that problem more effectually than the state institutions can. Having been myself brought up in the West I always took it for granted that coeducation was a part of the providential ordering of the universe, but nevertheless, I think that this corrective tendency is likely to show itself.

I think I heard a suggestion in Mr. Van Hise's paper that the man who was not capable of productive scholarship could hardly hope for advancement beyond the grade of instructor. It seems to me we ought to consider the claims of the man who, to paraphrase Falstaff, is not so much a productive scholar himself as the cause of productive scholarship in others. I recall one man whose most admiring students still speak of his attempts at productive scholarship with an apologetic smile but who, nevertheless, was one of the most effective directors in advanced instruction and research whom I suppose this country has ever produced. Before we relegate to the rear a man who is merely an effective instructor, and not a productive scholar, we should consider pretty carefully whether after all he is not as valuable to the cause of advanced education as the man who writes voluminously. The last thirty years would cover the period during which real productive scholarship, as distinguished from instruction, has been at a premium in this country; but this premium may become rather over enlarged, to the extent that every college man will feel under obligation to publish some kind of a treatise, with the result that a great many things will see the light that ought never to be published.

MR. STRINGHAM: Mr. Hall's remark about research in state universities reminds me that in three departments at the University of California the time of the workers is devoted primarily to scientific research. These are the departments of physiology, astronomy (at the Lick Observatory), and agriculture. Yet it is true that the acceptance of the idea that research is a legitimate function

of the state university is recent. The constitution of the state of California, adopted in 1879, affirmed the principle that the public moneys could be used only for primary education, thereby leaving stranded all the then existing high schools of the state. But with delightful inconsistency the legislature and the people voted to incorporate into that constitution the organic act of the state university. It was not until the year 1891 that a new law was passed authorizing local taxation for the maintenance of high schools. From this date on the number of high schools increased rapidly and a few more years sufficed to bring into general acceptance the idea that state moneys can be used for the maintenance of all departments of education, including the highest. The organization of departments of research has followed in natural course, and the question: is research work legitimate in a state university? has been answered in the affirmative.

THE CHAIRMAN: I think the point made by Mr. Carver is a very good one. I have in mind two men who are the cause of productive scholarships in others and form extremely efficient members of a faculty, but who do very little themselves so far as actual publication is concerned.

I do not think that the question as to how far it is desirable to relieve from teaching men primarily researchers, is settled. Examples can be given showing that it has in some cases proved disastrous to relieve them, and I am a little afraid of the tendency to relieve men from what may be regarded as the legitimate duties of a professor in order to give them time to make a show. I am not sure that it is for the interests of the man, nor for the interests of his university so to relieve him. He loses the extremely valuable stimulus of the teaching. We run some risk, as I see it, of making too much of the researcher and sacrificing some of his best qualities because we want to get more out of him. I think that is a question at all events that might be discussed at some time. It is hardly pertinent to the subject of the paper under consideration now, but it would be interesting to take it up at some other time.

MR. VAN HISE: I do not dissent from anything Mr. Carver or President Remsen has said in reference to the teacher who is not a productive scholar, although I think that such men should be exceptional. In giving the policy adopted at Wisconsin for the appointment of professors, I had no idea of proposing a general principle. Conditions at Wisconsin being as they are, I regard the policy announced as advisable for that institution at the present time. In reference to requiring instructional work from men who are investigators, in most cases it is well for a man who devotes most of his time to productive work to do also some instructional work. It seems to me that even for the head of a department it is an advantage to give at least one course of elementary lectures which go over his subject broadly.

MR. WEST: I am not sure that what I have to say will specifically refer to the difference between graduate instruction in the state universities, mainly in the West, and the endowed universities, mostly in the East, so much as to what seems to me a common source of difficulty, possibly a little more sharply accentuated in the state institutions of the West than in the institutions, which are free to disregard what the people want. I suppose we all agree with what Mr. Hadley said yesterday, that the business of the university after all is to maintain standards, whether by diffusing or advancing knowledge, and that independent of all learning and fluctuations of popular opinion. I think we have been yielding to one or two fallacies, and that one of them, being merely the excess of a good thing, is the idea that every professor must be a producer, more or less irrespective of the value of what he produces. And the flood of publications, say in some sub-

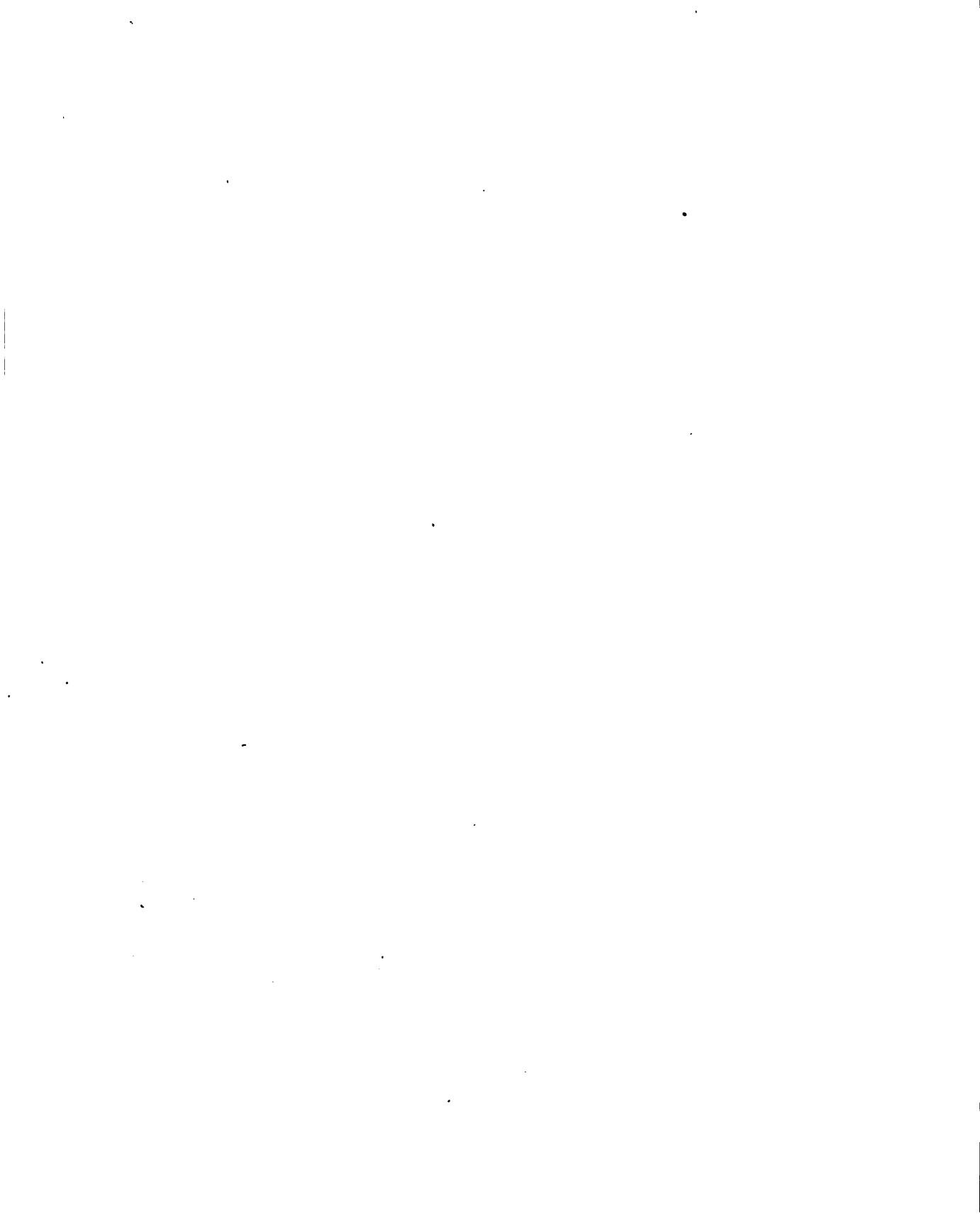
section of the vast field of biology, is swamping men—it is engulfing them. The men who and criticise and review what has been turned out in the year are very rare; in fact it is impossible. Germany is producing in one year more bound volumes than there are in Latin literature. And yet the impulse to produce, produce, produce—a splendid thing man cannot help doing a great thing—is an awful thing when second- and third-rate men are told to produce what they can produce—that is, merely second- and third-rate stuff. What is appearing is another form of productive work, the producing of the strong individual seen the close touch of the great master; that may be done by a man who is himself a well of knowledge for everybody and yet not a writer, not a recorder of what he thinks. Our graduate schools far too largely attended in many ways, and by men of a personality not equal to the run of the men in the senior class. If we are to get the real standardizing of knowledge, it has got to be by concentrating on the producing of the men, rather than on the producing of something in the way of treatises. The conclusions of the erratic man or the too-visionary man, no matter what his training, will always remain tainted with something visionary or erratic, and it is at those few strong personalites that is going to cure the difficulty in our graduate schools.

I venture to think that that trouble is greater in the state universities, as these must conform primarily to the standards of knowledge set by the educational authorities, but to those who are fied from time to time by the wishes of the community which it serves, and serves very



*THE ASSOCIATION
OF
AMERICAN UNIVERSITIES*

1905—1906



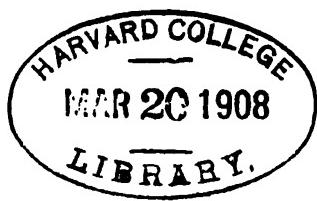
The Association of American Universities

JOURNAL
OF
PROCEEDINGS AND ADDRESSES
OF THE
SEVENTH ANNUAL CONFERENCE

HELD IN
SAN FRANCISCO, BERKELEY, AND PALO ALTO, CAL.
MARCH 14-17
1906

1906
PUBLISHED BY THE ASSOCIATION

George



The Association

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**MEMBERSHIP
OF
THE ASSOCIATION OF AMERICAN UNIVERSITIES**

UNIVERSITY OF CALIFORNIA, Berkeley, California

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C.

THE UNIVERSITY OF CHICAGO, Chicago, Illinois

CLARK UNIVERSITY, Worcester, Massachusetts

COLUMBIA UNIVERSITY, New York, N. Y.

CORNELL UNIVERSITY, Ithaca, N. Y.

HARVARD UNIVERSITY, Cambridge, Massachusetts

THE JOHNS HOPKINS UNIVERSITY, Baltimore, Maryland

THE LELAND STANFORD JUNIOR UNIVERSITY, Palo Alto, California

UNIVERSITY OF MICHIGAN, Ann Arbor, Michigan

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pennsylvania

PRINCETON UNIVERSITY, Princeton, New Jersey

UNIVERSITY OF VIRGINIA, Charlottesville, Virginia

UNIVERSITY OF WISCONSIN, Madison, Wisconsin

YALE UNIVERSITY, New Haven, Connecticut

CALENDAR OF CONFERENCES

- FIRST ANNUAL CONFERENCE** (organization),
Chicago, February 27, 28, 1900
- SECOND ANNUAL CONFERENCE,**
Chicago, February 26-28, 1901
- THIRD ANNUAL CONFERENCE,**
Chicago, February 25-27, 1902
- FOURTH ANNUAL CONFERENCE,**
New York, December 29-31, 1902
- FIFTH ANNUAL CONFERENCE,**
New Haven, February 18-20, 1904
- SIXTH ANNUAL CONFERENCE,**
Baltimore, January 12-14, 1905
- SEVENTH ANNUAL CONFERENCE,**
San Francisco, Berkeley, and Palo Alto,
March 14-17, 1906
-

OFFICERS

1906-1907

President—The representative of the University of California

Vice-President—The representative of Harvard University

Secretary—The representative of Columbia University

Additional members of the *Executive Committee*—The representative of the University of Chicago; the representative of the University of Wisconsin

THE SEVENTH ANNUAL CONFERENCE

FIRST DAY'S PROCEEDINGS

WEDNESDAY, MARCH 14, 1906

MINUTES

The delegates were received by the Regents of the University of California and by the Trustees of the Leland Stanford Junior University, at 12:45 P.M., in the Regents Room, Mark Hopkins Institute of Art, and were their guests at luncheon at one o'clock.

FIRST SESSION

The First Session was called to order in the Mark Hopkins Institute of Art at 2:30 P. M., with Mr. Van Hise, of the University of Wisconsin, in the chair.

The following representatives of the universities were present:

UNIVERSITY OF CALIFORNIA—Mr. Benjamin Ide Wheeler, Mr. Alexis F. Lange, Mr. A. O. Leuschner, Mr. Bernard Moses, Mr. Irving Stringham

UNIVERSITY OF CHICAGO—Mr. Ernest D. Burton

COLUMBIA UNIVERSITY—Mr. William H. Carpenter, Mr. Frederick P. Keppel

HARVARD UNIVERSITY—Mr. William James

JOHNS HOPKINS UNIVERSITY—Mr. Ira Remsen

LELAND STANFORD JUNIOR UNIVERSITY—Mr. John Caspar Branner, Mr. John Maxson Stillman, Mr. Augustus Taber Murray, Mr. John Ernst Matzke, Mr. David Starr Jordan

PRINCETON UNIVERSITY—Mr. Andrew F. West

UNIVERSITY OF WISCONSIN—Mr. Charles R. Van Hise

YALE UNIVERSITY—Mr. Theodore S. Woolsey

The following Universities were unrepresented:

CATHOLIC UNIVERSITY

CLARK UNIVERSITY

CORNELL UNIVERSITY (see p.ii)

UNIVERSITY OF MICHIGAN

UNIVERSITY OF PENNSYLVANIA

UNIVERSITY OF VIRGINIA

The minutes of the preceding Conference were approved as printed.

Mr. Carpenter, of Columbia University, and Mr. Leuschner, of the University of California, were requested to prepare reports of the meetings for the press.

The Executive Committee presented as its report the following:

The Association of American Universities

Resolved, That the Executive Committee does not deem it expedient at the present time to report any additional institutions for membership.

Upon motion, the report was accepted by the Association.

The Secretary presented the following **FINANCIAL REPORT**, previously approved by the Executive Committee; and, upon motion, the report was accepted.

RECEIPTS:

From fifteen assessments of \$25 each for the institutions represented in the Association	\$375.00
Balance on hand	304.74
	<hr/>
	\$679.74

EXPENDITURES:

For printing programs of Sixth Conference	\$ 10.50
For stenographic services, Sixth Conference	95.00
For printing proceedings, Sixth Conference	268.28
For telephone charges	1.00
For extra clerical assistance	4.00
For postage, express charges, and telegrams	31.64
For exchange on checks	0.30
	<hr/>
	\$410.72
Balance on hand March 8, 1906	<hr/> \$269.02

Upon recommendation of the Executive Committee, it was

Resolved, That the Association appoint a committee to draft a suitable memorial minute regarding the death of President Harper, of the University of Chicago, and that this minute, when suitably engrossed and signed by the head of each institution in the Association, be transmitted to the University of Chicago.

The Chair appointed upon this committee the representatives of Princeton University, of the University of California, and of the Leland Stanford Junior University.

Upon authorization by the Association, the Chair appointed the following Nominating Committee: the representative of Johns Hopkins University, the representative of the University of Chicago, and the representative of Columbia University.

Mr. Wheeler, on behalf of the University of California, presented a PAPER on "Interchange of Professors in Universities" (p. 14), and Mr. James presented a PAPER on the same subject prepared by Mr. Jerome D. Greene, on behalf of Harvard University (p. 17).

The following delegates took part in the DISCUSSION: Mr. Burton (p. 21), Mr. Carpenter (p. 22), Mr. Remsen (p. 22), Mr. Jordan (p. 22), Mr. West (p. 22), Mr. Woolsey (p. 22), Mr. Keppel (p. 23), Mr. Moses (p. 23).

The session adjourned at 5 P. M.

In the evening the delegates were entertained at dinner by the various alumni clubs of San Francisco.

SECOND DAY'S PROCEEDINGS

THURSDAY, MARCH 15, 1906

MINUTES

SECOND SESSION

The Session was called to order at 10:30 A. M. by Mr. Van Hise in the Faculty Room, California Hall, University of California, Berkeley.

The following delegate was present in addition to those at the preceding session:

CORNELL UNIVERSITY—Mr. C. A. Duniway

Mr. David Starr Jordan, on behalf of the Leland Stanford Junior University, presented a PAPER on "To What Extent Should the University Investigator be Relieved from Teaching?" (p. 23). Mr. Theodore S. Woolsey presented a PAPER on the same subject, prepared by Mr. Arthur T. Hadley, on behalf of Yale University (p. 43).

The following delegates took part in the DISCUSSION: Mr. West (p. 48), Mr. Remsen (p. 48), Mr. James (p. 49), Mr. Duniway (p. 49), Mr. Burton (p. 50), Mr. Wheeler, (p. 50), Mr. Van Hise (p. 51), Mr. Jordan (p. 51).

The session adjourned at 12:30 P. M., after which the delegates were the guests of the President and Faculties of the University of California at luncheon at the Faculty Club. At 3:30 P. M., the delegates attended the Third University Symphony Concert in the Greek Theatre, and at 7 P. M., they were the guests at dinner of the University Club of San Francisco.

THIRD DAY'S PROCEEDINGS

FRIDAY, MARCH 16, 1906

MINUTES

THIRD SESSION

At 11:15 A. M. the delegates were present by invitation at the University Assembly at the Leland Stanford Junior University, and at 12:30 were entertained at luncheon by the President of the University and Mrs. Jordan.

The Third Session was called to order at 2:30 P. M. by Mr. Van Hise in Room 205, Leland Stanford Junior University, Palo Alto.

The Committee on Nominations reported as follows:

For *President*—The representative of the University of California

For *Vice-President*—The representative of Harvard University

The Association of American Universities

For *Secretary*—The representative of Columbia University (appointed at the Fourth Conference to serve for five years)

For Members at Large of the *Executive Committee*—The representative of the University of Chicago; the representative of the University of Wisconsin

The nominations of the committee were approved, and the officers nominated were declared elected.

Upon motion, the question of time and place of the Eighth Conference was referred with power to the Executive Committee.

Mr. Duniway presented a PAPER on "The Reaction of Graduate Work on the Other Work of the University," prepared by Mr. Jacob Gould Schurman, on behalf of Cornell University (p. 51). Mr. Carpenter, of Columbia University, presented a PAPER on the same subject (p. 61); and, upon motion, further discussion was postponed until the following session.

The session adjourned at 4 P. M.

At 7 P. M. the delegates were entertained at dinner by the "University of Bohemia" at the Bohemian Club of San Francisco.

FOURTH DAY'S PROCEEDINGS

SATURDAY, MARCH 17, 1906

MINUTES

FOURTH SESSION

The Fourth Session was called to order by Mr. Van Hise at 9:15 A. M., at the Hotel St. Francis, and adjourned to meet at the Mark Hopkins Institute of Art at 9:45 A. M. There was no discussion upon the papers presented at the previous session.

Certain topics for discussion at the next conference were suggested, and upon motion it was

Resolved, That the preparation of the program for the Eighth Conference be referred with power to the Executive Committee.

Mr. Andrew F. West, on behalf of Princeton University, presented a PAPER on "The Changing Conception of the 'Faculty' in American Universities" (p. 65).

The following delegates took part in the DISCUSSION: Mr. Van Hise (p. 73), Mr. Remsen (p. 74), and Mr. Stringham (p. 75).

Upon the invitation of the Association, Mr. Charles M. Gayley, of the University of California, addressed the session on the subject of an organization for the republication of manuscripts and early printed books in facsimile.

On motion, the thanks of the Association were extended to Mr. Gayley for his interest-

ing address, and the question of co-operation on behalf of the Association was referred with power to the Executive Committee.

Upon motion, it was unanimously

Resolved, That we, the delegates to the 1906 session of the Association of American Universities, desire to express our appreciation of the delightful hospitality which our hosts, the University of California and the Leland Stanford Junior University, have shown us; that we carry away with us an indelible impression of the scholarship, the equipment, the organization, and the nobility of aim which these two great institutions exhibit; that we believe that hand in hand they have inspired, and we are witnessing, an æsthetic movement in harmony with the beauty and charm of this far-western Italy, and that in taking leave of these kind friends, old and new, we leave our hearts behind us. Moreover, it is our privilege to bear grateful witness to the welcome shown us by the city of San Francisco, particularly through the hospitality of the University Club, the Bohemian Club, and the United Railroads of the city.

Upon motion, the session adjourned at 11 A. M. *sine die*.

The private car of the President of the United Railroads of San Francisco was then placed at the disposal of the delegates.

MEETING OF THE EXECUTIVE COMMITTEE

After the adjournment of the fourth session a meeting of the Executive Committee was held, at which the following representatives were present:

For the University of California, *President*—Mr. Stringham and Mr. Leuschner

For Harvard University, *Vice-President*—Mr. James

For Columbia University, *Secretary*—Mr. Carpenter and Mr. Keppel

For the University of Wisconsin—Mr. Van Hise

For the University of Chicago—Mr. Burton

Upon motion, it was

Resolved, That the matters referred by the Association to the Executive Committee be treated in the usual manner by correspondence.

MINUTE OF THE ASSOCIATION.

The text of the minute referred to on page 10 is as follows:

In the death of William Rainey Harper, first President and intellectual founder of the University of Chicago, our higher education has sustained a most serious loss. He was a profound and influential scholar in Semitic studies, a keen and comprehensive thinker in the domain of education, an administrator of extraordinary power to plan and execute policies of far-reaching import, a man of quick activities, tireless energy, unshaken courage, and winning personal goodness. His heroic example of uncomplaining cheerfulness and ceaseless industry, while battling with hopeless disease during the last year of his life, has made his memory a spiritual endowment of priceless value to his own University and to American education.

THE ASSOCIATION OF AMERICAN UNIVERSITIES

PAPERS AND DISCUSSIONS DURING THE SEVENTH ANNUAL CONFERENCE

FIRST SESSION

INTERCHANGE OF PROFESSORS IN UNIVERSITIES

**PAPER PRESENTED ON BEHALF OF THE UNIVERSITY OF CALIFORNIA BY
PRESIDENT BENJAMIN I. WHEELER**

I shall undertake this afternoon to present nothing more than a brief outline of views that may be suited to serve as a proemion to the discussion of the afternoon. There is very little dogma involved in the statements which we present to you, inasmuch as dogma is not ordinarily understood to have a place in a proemion. It shall serve, at any rate, the purpose of making the body feel perfectly free here in California to discuss any subject with total liberty.

The question of interchange of professors, viewed from the administrative side, is evidently first of all a question of co-operation. If co-operation conceal beneath a beneficent name any form or degree of consolidation or syndication, it may justly be viewed with suspicion. The universities happen to be at present almost the only refuge of freedom left to us in this home of the free, and it behooves them, in the interest of the body politic and of themselves, to adhere just at this time with reinforced jealousy to their heritage of congregational autonomy. It may have seemed at first the dictate of an exorbitant caution which caused this Association to refrain from the usually harmless exercise of adopting resolutions, but it must now be clear that the only unity toward which our converse can justly and safely lead is to be spiritual rather than corporeal. All that we can exact of these meetings is sufficient practical result in terms of mutual appreciation and common understanding to keep them alive from year to year. We ought not to be particularly desirous of growing more alike. It is to the interest of the country that we each maintain a character of our own true to our historic traditions and adjusted to the work we each have at our doors. Particularly is this desirable in the case of the smaller institutions called colleges. I think they do well to fill at least half their positions from their own graduates. A college full of migratory teachers will be a colorless college.

The latter-day abhorrence of breeding in and in has given all our institutions a reasonable immunity from isolation, and the larger universities, where research is encouraged, and where in the making of appointments the vulgate ratings of the professional specialty, as established in publications and the intercourse of associations, are freely consulted, are surely not bending at present in the direction of particularism.

The issue of particularism and distinctive character is not, however, involved in that of autonomy. The necessary inertia of established home will always be sufficient to prevent any amount of interchange of teachers that ever may be cultivated into existence, from disturbing the essential continuity of each university's life. The complete autonomy of each institution will be preserved under a system of interchange, provided each case is settled for itself by individual agreement between the two institutions concerned. Beyond that I should be loath to see the system extended. Lovers of high organization will, of course, allow their minds to wander into wide fields of exchange bureaus and agencies, and even perhaps to the creation of a distinct order of migratory scholars who shall interpret university extension in Erasmus' sense of extending the higher intellectual life among the universities.

The question of interchange is, in the second place, a question of flexibility. Interchange is in the main applicable only to institutions of a sufficiently large and diversified corps of instruction, and of sufficient freedom of curricula to admit of leaving out specific courses, and adding others, practically at will. All universities seem to be obliged to maintain a certain number of stock courses in the most frequented departments, and especially for the lower-class men. The greater the proportion of this fixed schedule, the stronger is the barrier to interchange. It will be mostly vain to fit professors into existing courses. A university will, of course, get the most out of a visiting professor when it leaves him free to teach what he thinks he can teach best, and in his own way.

The full-year courses are also a barrier. The more fully we all come to the frank adoption of the semester arrangement, the better it will be for every cause of migration, whether of students or of professors. A great many students now find it difficult to adjust their work to the work of the university which they may wish to enter in the middle of the year, simply because universities have come to have an apparently meaningless preference for courses that run through the year. A semester ought to be long enough for any professor to unfold a subject, and to inspire in any student a pronounced taste or distaste which shall be a beacon to his life. It would be better if one-hour courses, and perhaps two-hour courses, were abolished altogether; and the concentration upon the semester would aid toward this desirable end. No man who values intellectual calm ought to be interweaving four or five distinct courses into the fabric of a single week (I say this of a teaching man). The five-hour course is the best type, and, excepting the weekly seminary, nothing else but the three-hour course is ordinarily economical.

The semestral system affords, it must also be noticed, a convenient opportunity of bisecting the sabbatical year, which ought to be embraced oftener than it is. The Uni-

versity of California now permits a professor to claim either a free year after six years of teaching or a free half-year after three years. For many reasons two half-years will often, and I think oftener, prove better than a one whole year. An interchange for a semester, furthermore, may often be practicable when one for a whole year would be too cumbrous, either for one or both of the universities concerned, or for the professors.

Flexibility must, furthermore, extend to the subjects exchanged. It ought to be possible, namely, not only to institute an exchange between, we will say, a teacher of mediæval history and modern European history, but between physics and chemistry, or any two subjects within one of the greater groups. It is the men and not the exact topics that should be interchanged, the interests only of the students who may require some continuity in their own work being considered.

And we have to consider the matter of budgets. Continuity of budgets is a very important thing in administering the stability of universities. The matter of salary is capable of introducing difficulties, but it seems to me that the most reasonable solution, and the one least likely to introduce artificial embarrassment, would be that which does not always insist upon the interchange of men of equal rank and remuneration, but which continues each man upon the salary he receives at home, with a small addition for the necessary traveling expenses and extra cost of establishment in a new home. The advantage to the professor must be found in the stimulus of a new environment, the acquaintance with a new place and new conditions, and enlargement of his intellectual constituency.

It is to be hoped that the interchange may not be limited to older men of established reputation. Young men will gain most from the opportunity. It is a most unfortunate limitation upon the usefulness of a great body of our professors in all the universities that they have not taught in more than one institution. They are limited in their associations, limited in their conceptions of what it is possible to do by way of teaching, study, research, limited in their views of university policy. Many a good university man would have been rescued from aridity if by transfer to another institution he could have been shaken out of his congealing ruts before the frosts of fifty fell upon his way. It is in general a safe rule not to allow a man to receive his three advancements in the university career—*instructor, assistant professor, professor*—at the hand of one and the same institution.

The only form of professorial interchange which the University of California has thus far tested connects itself with the summer session. While there is herein no direct exchange of services between universities, there is yet present the full opportunity of testing the advantages on the one side, namely on the side of the recipient of services. The bringing in of summer session teachers from other universities has had as its first notable effect the loss of some of our own best professors through calls to universities from which the visitors came. This is symptomatic of what interchange is certain to bring about. It will tend toward bringing professional values out into a general national market. It will tend toward securing the best positions to the best talent.

But the visiting professors have proven to be far more and better than spies upon our good things. They have, to be sure, taken much of our property away with them when they went, but they have set the impress of their benediction upon what they left behind, which was so vastly more than they took that the balance-sheet still shows great advantage to us and ours.

We shall not discontinue the usage of bringing people to our summer session for fear of having our good material made known to the world. We have found that the coming in of these men brings a breeze of fresh air into the university. It has established associations, connections, and interests in our own body that have been of invaluable influence. It has given us a little foretaste of what interchange of professors might mean. It could be best applied, first of all, in the directions where mutual advantage is concerned, where professors shall come to us in California for some specific reason, as special study or health, and an exchange in return therefor can be negotiated on some basis of mutual advantage. A serious handicap on the freedom of this interchange will be established if we are always to insist upon it that an exchange be of the exact subject. At any rate we find under our present arrangements no embarrassments to such interchange. We are gradually bringing our budget organization, so far as the teaching force is concerned, upon the semester basis. We should be ready to inaugurate an exchange by the semester. It is now possible for our professors to be away in any semester so long as due notice is given us. Substantially, we have nothing to urge against the proposition in general, but are ready to co-operate with the other universities in bringing about what seems to us a very desirable end.

THE INTERCHANGE OF PROFESSORS IN UNIVERSITIES: THE EXPERIENCE OF HARVARD UNIVERSITY

PAPER PREPARED BY MR. JEROME D. GREENE AND PRESENTED ON BEHALF OF HARVARD UNIVERSITY BY PROFESSOR WILLIAM JAMES

The interchange of professors between Harvard and other universities has not, until the current academic year, taken the form of simultaneous give and take. This year, in fulfilment of a standing agreement between Harvard University and the Cultusministerium at Berlin, entered into during the winter of 1904-5, a Harvard professor has spent an entire semester at the University of Berlin, giving regular courses of lectures on stated days of each week; while a professor from the University of Leipzig has been in residence for the first half-year at Cambridge, giving three courses under the Faculty of Arts and Sciences—courses announced in the *University Catalogue* and counted toward degrees.

Harvard professors have frequently given courses in the summer sessions of other universities, but, except in the case of the University of Chicago, where the summer quarter is co-ordinated with the other three quarters and constitutes an important part of the regular academic year, this service has been like that which Harvard itself obtains in its own sum-

mer school from the teachers of other universities—a service which, although of high value, connects the visiting professor imperfectly, at best, with the ordinary life of the university visited. To the University of Chicago, from 1902 to 1904, Harvard lent the services of Professor Joseph H. Beale, Jr., as the organizer and first dean of its Law School, and during the current year a Harvard professor has gone into residence for the second term at a university on the Pacific coast. For the last two years Harvard has been represented in France by a professor spending the entire first semester in regular teaching at the Sorbonne and the second semester in a tour through the provincial universities. This mission was inaugurated by Professor Barrett Wendell, whose lectures at the Sorbonne were given as a *cours publique*, and admitted the lecturer to the standing and many of the privileges of a professor at the university. Professor George Santayana is the Harvard lecturer in France this year.

Harvard welcomes nearly every year teachers from other universities, who take their place in the regular teaching staff for a half-year or a whole year. For example, the University has been served in this way by Professor George T. Ladd, of Yale; the late President Francis A. Walker, of the Massachusetts Institute of Technology; Professor Basil L. Gildersleeve, of Johns Hopkins; Professor Wallace M. Lindsay, of Oxford; Professor William Cunningham, of Cambridge; Professors Charles H. Haskins and Frederick J. Turner, of the University of Wisconsin; Professor William Z. Ripley, of the Massachusetts Institute of Technology; Professor Edward Capps, of the University of Chicago; Professor Hanns Oertel, of Yale; and Professor Ernst H. Mensel, of Smith College. As this list indicates, Harvard University has sometimes been so fortunate as to recruit its own permanent staff by means of these annual lectureships. Those departments which in recent years have borrowed most frequently from other universities are unanimous in testifying to the value of their experience and to the profit to be derived from an extension of the practice, provided that it take the form of a real exchange. One-sided lending must necessarily have narrow limits.

There are two obstacles to the extension of professorial interchanges, both resolvable to questions of expense. As a rule, the opportunity to employ teachers from other institutions is created by the absence of professors, on "sabbatical" leave. At Harvard every teacher of the rank of assistant professor or of higher rank is entitled to one year's absence in seven, on half-pay; but some professors cannot afford to relinquish their full pay, and therefore never ask for leave. Were it possible to give leave on full pay, sabbatical vacancies would occur more frequently, and there would be greater dependence on one-year or half-year lecturers from other universities. The second limitation is due to the fact that, as a general rule, visiting professors are invited to offer substitutes only for the advanced courses of absent teachers, thus increasing the burden of elementary teaching, to say nothing of administrative work, for the rest of the staff. These obstacles would be removed or diminished were it possible to spend more money on annual appropriations for elementary work.

Harvard University would probably welcome a general system of interchanges quite independent of sabbatical absences. If such a system should be adopted, visiting professors would continue to do full work (or work that counted as such) on full pay; and an additional appropriation would be made to meet traveling expenses and extra living expenses. Such, in fact, is the present arrangement between Harvard University and the German government. The advantage to be gained from such exchanges would be that they could be definitely agreed upon more than a year in advance, thus making it possible to advertise the exchange courses in the catalogues of both universities, so that students could include them in their plans of work, just as students now include in their plans certain courses advertised as to be given in a subsequent year, though omitted in the current year. These "bracketed" courses, as we call them, are an indispensable part of our *Catalogue* announcements. Applications for sabbatical leave, on the other hand, are sometimes made so late that it is difficult to secure the services of suitable substitutes, or to give proper notice of substituted courses.

The interchange of professors between Harvard University and the German universities being a novel experiment, its workings in the first year are worthy of further mention.

Professor Wilhelm Ostwald, whose name and personality are familiar on the Pacific coast, began work in Cambridge with the opening of the academic year last October. His subjects were "The Philosophy of Natural Science," given in English, "The Fundamental Conceptions of Chemistry," given in English, and "Catalysis," given in German. Coming to Harvard, a private institution having no connection with either federal or state government, Professor Ostwald was received into our academic family as an American colleague would be received. Though advantage was taken of his presence socially, and by meetings of learned organizations, he entered the university only as an honored teacher with whom one came in contact in the simple fashion of our university life. His course in philosophy had an average attendance of about fifty, and his English course in chemistry of about thirty. His course in catalysis, in German, naturally had a smaller attendance, thirteen students being regularly enrolled. His students in all three courses have united in expressions of their satisfaction with his teaching and of their delight in feeling, at close range, his invigorating personality.

Harvard was represented at the University of Berlin during the first semester by Professor Francis G. Peabody, who gave one course twice a week on "The Modern World and the Christian Character," and another course four times a week on "Social Ethics in the United States." Both courses were given in English. The attendance in both courses was steadily maintained, the number of auditors in the first course ranging from seventy to eighty, and in the second from one hundred and eighty to two hundred. Professor Peabody's inaugural lecture in October and his closing lecture in February were made the occasion of remarkable demonstrations of hospitality and cordiality; and during the entire period of his residence he was left in no doubt of the sympathy and friendliness with which his mission was welcomed. While these evidences of good feeling

division of our academic year into quarters, however, it will be very difficult for us to effect exchanges in the strict sense, unless these be for a full year.

MR. CARPENTER: The details of the arrangement between Columbia University and the Prussian government are somewhat different from those recited by Professor James. Through the generosity of Mr. James Speyer, of New York, a fund of fifty thousand dollars was given to Columbia University for the support each year of a professor in the University of Berlin for a semester, the agreement being that a German professor should also be sent to Columbia for the corresponding period, and that a definite sum of money be set apart as a fund for the purpose. Our professorship is in American history and institutions, and the corresponding German foundation is in German history, literature, and economics. This professor will lecture, not in German, but in English, at Columbia, and our representative will lecture in German at the University of Berlin. The professor, however, is to have his advanced work in his own language; that is, at Berlin in English, and at New York in German. Our first professor, to go next year, is Professor Burgess, who is well known in his particular field, and the University of Bonn is to send us a professor of economics, Professor Schumacher.

MR. REMSEN: I do not look for any remarkable results from either of the systems that have been spoken of. We, at Johns Hopkins, have never exchanged professors. We have borrowed lots of them, and our professors have been invited to go elsewhere, but that is not interchange.

MR. JORDAN: We have on foot a plan for direct exchange for professors of mathematics with the University of California. This will probably be carried out, each professor receiving his own salary and doing the work of his colleague in the other institution.

MR. WEST: There is a distinction between the advisability, which we all see, of the visiting professor and the desirability or necessity of working up a system of swapping or interchange. It does seem to me there are some dangers of working it into a system. I cannot help feeling that one of our greatest dangers is the worship of organization and machinery which is being carried in our land farther than anywhere else; and then I have a feeling against limiting the form of visitation known as interchange to interchange in one subject. Why must the man who goes and the man who comes be in the same field? The whole thing is not in the subject, but in the man. Why not cut the whole subject of interchange in two and just let us talk of the visiting professor, getting wherever we can a strong, free man from another university to come and stir us up a little; in all events, let us not interlock the thing so that you cannot send the man unless the other man comes. If we ever come to any interchange with English universities, we have not precisely the specific thing to send to Oxford, for instance, which Oxford has specifically to send to us.

MR. WOOLSEY: In considering the interchange of professors, the question had been considered rather from the standpoint of the professor's convenience and reputation than from that of its educational value to the student. To be of value to the student, such interchange should be seriously conducted, not an exhibition of intellectual fireworks or to gratify curiosity, but so ordered as to mean hard work on his part, with such tests or examinations as will secure this. And may I ask if any University here represented has experimented with three-hour courses; that is, with no course involving less than three hours per week? Then the year may be cut into three terms, with the proper examinations and intervals, and a single-hour course could be given in a term at this rate. It seems to me such a system would be very well adopted to a visiting professor.

MR. KEPPEL: There is at present an attempt being made by Yale and Columbia to get at something of the same result as would be obtained by an interchange, by co-operating in courses for a specific purpose. These two universities are planning a joint course for men who wish to go into the diplomatic and consular service in the East. For this specific purpose the students at each university will have the professors of both universities. Such a scheme of co-operation will certainly bear watching.

MR. MOSES: We rely very largely upon the residents of the several countries to bring about satisfactory relations between the different nations. If we send to a foreign country a man of intelligence and learning—a man of standing as a professor—he may have, through his relation to the cultivated men of that country, quite as much influence as some of the men who are sent as ministers. One of our problems is to make smooth the relations between ourselves and other republics on this continent. The republic of Argentina has a university of some standing situated in a city of over a million inhabitants. If a distinguished man, say in constitutional law, from the University of Buenos Ayres were called to a university of this country, it might enlighten us greatly about a part of the world concerning which we do not know very much, and vice versa. It seems to me the diplomatic effect of such an interchange ought to be of considerable importance.

SECOND SESSION

TO WHAT EXTENT SHOULD THE UNIVERSITY INVESTIGATOR BE RELIEVED FROM TEACHING?

PAPER PRESENTED ON BEHALF OF THE LELAND STANFORD JUNIOR UNIVERSITY BY
PRESIDENT DAVID STARR JORDAN

There can be no single, direct answer to this question. The answer depends on the man, on what he is doing or how he is trying to do it. And if the man be really a capable investigator, he will be most competent to answer this question for himself. There is then no collective problem admitting of a single answer. The important element lies in the premise that the university must foster research as an integral part of its work, for its own sake as an institution, and for the good of humanity. It is research which has made universities possible, and they must provide for the continuance of the succession. Again, teaching without research is not university teaching. In this sense, we must give a broad definition to the word "research." It is the appeal to first sources. Teaching from second-hand material is never good teaching.

It is the duty of the university to discover, to co-ordinate, and to disseminate truth; and with this to train scholars and workers, and to develop personality and character. In this many-sided work all members of the university should take some part; but these parts, in the nature of things, must be very unequal. Not many men excel in all phases of university usefulness. Some rare men are useful in the highest degree—but in one line only. Around those pre-eminent in the discovery of truth, chairs of investigation may be built up.

But the man should always come before the chair. It is futile to frame a chair of investigation, and then seek a man to fill it. In general, the investigator who cannot teach at all is subject to some defect of temper or to some deficiency in health.

As the world goes, with men of our breed the primary value of research is in relation to teaching. "The real teacher is the man advancing in some direction" (T. H. Morgan). Many sorts of mental effort go by the name of research, and properly so. These range from first-hand study of well-known problems through all phases of case-counting and hair-splitting,—the rearrangement of old material and the description of new—up to competent and courageous excursions into unknown realms of thought and observation. Some may go far and bring back rich returns; some go but a little way and bring back new aspects of old surroundings; but all should go somewhere and bring back something. It is not needful that all departments should adopt the same methods in research. I see no reason why Greek literature, for example, should be treated as though it were a branch of histology, and history need not be stated in terms of chemical reactions. It does not make work scientific to make it hard. All fresh work is desirable; all should be encouraged; though to most men, even university men, only the simpler forms of research can ever be possible. A man of no great talent for scientific pioneering may be an effective teacher, but a man whose grasp of facts and principles is wholly second-hand can never be such. However old his conceptions, and however often his thoughts have been expressed, he must derive them afresh from nature, if he is to make them vital to others. To the extent that he does so, he is engaged in a form of research. It is his instinct for first-hand contact, the joy in dealing with realities, which is essential to the great teacher, and these traits are primarily those of the investigator also. The love for research grows with practice. It is never safe to let it die. Hence the importance of continuity in investigation and the need of it for the teacher at all stages of his development. A man capable of research will do something of it wherever he is and whatever his limitations. In Huxley's phrase, it is "the breath of his nostrils." With time and appliances he will do more work and better work; but you may know the real university man by the fact that he does some work which is his own even under the most untoward conditions. He is safe so long as he is growing. A growing man incites growth; but not even mold will grow on a fossil.

The American university is emphatically a teaching university, to borrow the English distinction of schools that teach from schools that examine. Its professors are teachers. They are not primarily examiners, as the professors are in the English universities of all classes; nor do they have the freedom from personal responsibility that is often assumed in the universities of Germany. For the rank and file of our university men, teaching is the main function, and investigation receives its first value from the fact that adequate teaching is impossible without it.

In general, the university professor recognizes his double duty—his actual work as a teacher, and his duty as an investigator to become a better teacher. Some teaching in general aids investigation: it clarifies the mind, broadens the view, and saves from

vagaries. Teaching and investigation, in a general way, are mutually helpful—if the combination is not carried too far beyond the fatigue point. This varies with different subjects and with different men. When the two conflict, investigation is likely to suffer. Research can be postponed—teaching cannot. Too much teaching breeds brain fag, which kills the joy of knowing and doing. Here again the personal equation comes in, and to a large degree. Some men do their best work gregariously, directing, controlling and stimulating the interest of others. Some can work well only when alone and undisturbed. Some kinds of work demand uninterrupted attention for a period. Some require special visits to libraries, to museums, or to distant lands. All these matters should receive consideration by university authorities. The plan of giving each year, on full pay, absolute freedom to one or two professors engaged in research, the same privilege later to be extended to others, is one which deserves general consideration. This absence should mean a year for work, not for rest, nor travel, nor for writing textbooks. The present sabbatical arrangement will serve for these, but the pursuit of science demands something more than half-pay furloughs. The university authorities should consider these things, and so should the competent worker, who must be the final judge of his own work and his own needs.

An obstacle in the way of this and various other forms of relief, which inure to the gain of the university, lies in the need of personal discrimination, to which governing boards are painfully averse. The mediocre worker is with us, as well as the man who cannot investigate at all. A form of senatorial courtesy obtains in all university faculties. Without it, team-work, or work as a co-operative body of scholars, would be impossible. But this very fact forms an obstacle to the relief of those men who could make the best use of freedom.

Among young men who have done a little work there is too much conceit of research, and overmuch desire to secure at once its rewards. Research pays its own way and asks no reward. Moreover, overmuch cackling indicates that eggs are really small and few. Not all who talk of research, even in Germany, shall enter the kingdom. Perfunctory work, work done for the purpose of catching the attention of the easily deceived college president; work done to be heard from, all these count for very little. Freedom from teaching might only increase the quantity, making its badness more visible. This fact the Carnegie Institution has served to make plain, in its dealings with some of our callow doctors of philosophy.

Moreover, the real investigator will follow his own bent. The disposition of our young men “to paddle in the same pool,” to rush toward each new field where something new is proposed, is a symptom of incompetence. There are fads in investigation, and while the fad is on, the product is scanty. In general, all fields of research are open alike, and they have always been open. Each excursion into one of them is rewarded according to its deserts. In this quest single-heartedness and broad-mindedness are the elements which count for most. Cleverness, technique, speed, self-confidence, facility, versatility, perfection of method even—all these are matters of equipment and of minor importance. Too often novelty in work is unduly exalted. Much which we call method is only the

trick of making a very small discovery appear remarkable through bolstering of bibliography, philosophy, and historical criticism.

In general, the investigator will wish to publish his results. The instinct of the teacher impels him to do this. Yet it is true that publication is a very poor test of research. Some men keep their results for years—for many years, holding them until their conclusions are ripened, their suppositions verified. A voluminous bibliography does not necessarily mean a contribution to knowledge. It does not even imply originality of thought or breadth of observation. It is quality that counts, and a single fact well tested and set in orderly relation may outweigh volumes of argument or theory. Under the stimulus to get into print very much is now put forth which university men everywhere feel might be better dropped into the waste-basket. This would be its final fate—printed or not—were it not for the demands of blindly conscientious bibliographers. Some twenty years ago I used these words:

I am well aware that there is a cant of investigation, as of religion and of all other good things. Germany, for example, is full of young men who set forth to investigate, not because they "are called to explore truth," but because research is the popular fad, and inroads into new fields the prerequisite to promotion. And so they burrow into every corner of science, philology, philosophy, and history, and produce petty results in as automatic fashion as if they were so many excavating machines. Real investigators are born, not made, and this uninspired digging into old roots and *Urquellen* bears the same relation to the work of the real investigators that the Latin verses of Rugby and Eton bear to Virgil and Horace. Nevertheless, it is true that no second-hand man was ever a great teacher. I very much doubt if any really great investigator was ever a poor teacher. How could he be so? The very presence of Asa Gray was an inspiration to students of botany for years after he had left the classroom. Such a man leaves the stamp of his greatness on every student who comes within the range of his influence.

University authorities must therefore not fear to become respecters of persons. They should give time, freedom, appliances where these things can be used, while refusing them to the man who would thereby merely advertise his own significance.

The valuation of research is at best a difficult problem. Much of the results of hard labor would be better left unpublished, and the valuations set by the authors will not be recognized by the workers of the future. Spurious research is worse than nothing. The pressure to print something is responsible for much of it; the leisure of fellowships, for much more. Only a few men can make use of leisure. Moreover, leisure without adequate salary avails little. The busy man, under the pressure of poverty, edits texts, writes encyclopedias, throws out potboilers of every kind available to his profession. This is not research. It may be respectable, but it does not develop originality nor mark progress.

In the American university of today we teach too much, too many hours, too much that is not worth while, too much to people who do not care for this teaching. We teach at too low a tension, with too little enthusiasm, too little inspiration, throwing too little responsibility on the students, showing too great patience with those not worthy to accept responsibility. The men we call professors are paid too little, helped too much in their

early preparation, promoted too rapidly, and above all with too little discrimination. It would be better for our universities if half our teachers were in some other profession—if the best half were the ones who remained. This will not be the case until our present scale of salaries is advanced. There is too much encouragement of digs—men with technical accuracy, but without personal force or originality or skill in interpretation of new material. There is too much toleration of volatile versatility and of the methods of the Sunday supplement. In our profession it is too easy to get into line for promotion, while promotion itself ought to carry more pay, more freedom, and with all this far higher responsibilities than those we now demand.

Some large degree of freedom from teaching should therefore be accessible to the investigator, and this freedom can be stated only as a principle, not reduced to rule or set forth in terms of hours or percentages. But as teaching is itself dear to most true investigators, there are other lines of freedom still more important than relief from class work. The work that kills is not teaching, but the routine which goes with teaching. Governor Stanford once told me that he thought the president of the university should do nothing whatever which he could hire someone else to do. The university professor should be placed in just this position. Everything that can just as well be done by someone else should be taken from his shoulders. He should have a stenographer, a reader, an artist, an artisan, a *Diener*—all the helpers who can save his time and add to the strength and dignity of his work. A certain amount of executive work, even of committee work, he should be glad to retain; for the American university is a corporation whose affairs need constant vigilance on the part of somebody. In the long run its greatest scholars are its wisest men, and in their hands its control should finally lie. The highest type of investigation demands many of the qualities which make a man successful as an administrator. Moreover, it would be a pity and a misfortune to have academic management fall into the hands of those not in sympathy with the highest functions of the university itself. It is not the business man, nor the clerk, nor the routine administrator, but the man of science, the man of learning, who should direct the internal management of the university. Those who do not understand the work of the scholar cannot wisely direct the scholar's affairs. It may be a matter of waste to use our scholars for executive purposes, but it will go hard with scholarship if the scholar actually loses control.

It is surely a mistake to suppose that any scholarly gentleman who becomes a professor can train investigators. It is the master's touch which awakens the latent instincts of the student. Only the university man can create the university atmosphere.

It is not well that even the best of university men should be freed from responsibility for the welfare of the university in all its interests. Leisure without responsibility is dangerous to all save the greatest. This the English universities have demonstrated, though they have not acted on their knowledge. The fellows of Oxford and Cambridge are provided with life stipends, that they may devote themselves freely to teaching or to research. Half of these men are doing nothing even remotely connected with scholarship. With

many of them fox-hunting occupies a higher place than philosophy, and the draught from the Pierian spring is replaced by stronger and more familiar beverages.

Among endowed investigators in Europe it is no uncommon thing for a man to say: "It is time for me to produce another paper; research is due this year again." Then the investigator hunts through the museum or the library for some topic which will yield the maximum of pages with the minimum of labor.

I do not think that men have often succeeded in research unless they have rejoiced in such work, unless they have found it the spontaneous expression of their natural activities. Such joy in production gives no guarantee that the work shall be good, but it gives the basis on which training can be made effective.

I cannot agree with those who regard university professorships for research alone as one of the primary essentials of the American university. We cannot divide our men into research professors and teaching professors. It is not good for the universities that among its varied helpers we should recognize distinctions of caste, nor should we try to develop one group of professors as higher than another or apart from it. Professor N. S. Shaler has well said:

I believe that no teacher should be so burdened with instruction that he cannot do inquiry to a reasonable extent. If he accepts the office of teacher, he must make that work his principal end. He should understand that inquiry is necessary to fit him for teaching.

I think that the effect would be bad of having certain men set aside as inquirers even for a part of their time. It would tend to increase that already painful division of our instructors into men who are alive and men who are dead. A man should look upon research as he does on traveling—something that, if he is a bread-winner, he has to take by the way. Only a blessed few who have the rare combination of money and purpose can devote themselves to it.

In the same vein, Professor James Perrin Smith observes:

One teaches better by example than by precept, and every university professor should be an investigator in the work that he teaches. But routine teaching must be done, and the setting aside of a certain number of men as a sort of priesthood to do nothing but research will make the burden of teaching fall more heavily on the less favored ones, some of whom may contain the germs of real contributions to science or literature. In this way both the research and the teaching will tend to become poorer.

Dr. John C. Branner says:

I do not think that everyone who is interested in or capable of carrying on investigation has, or should be encouraged to believe that he has, some sort of right to a professorial position. Every professor (not emeritus) should be required to give an important part of his time to personal instruction, or to the supervision and direction of instruction. At the same time, the professor who is not engaged in research of some kind is not a fit person to be a professor, though he may be a valuable man for giving certain kinds of instruction. Such a person should not be promoted beyond a subordinate position.

My final answer to the question before us is this:

The university should recognize the necessity of research to university men, and in a

much greater degree than is now the case in any American university. It should provide for this by furnishing all needed appliances, material, books, clerical help, artists, assistants, leisure, and freedom. These needs cannot be enumerated categorically, for they must vary with each individual man. Among them should be named provision from some source to insure adequate publication. The plan of granting regularly to one or more professors each year a research leave of absence or of freedom from all other duties is especially to be commended. Each competent investigator can be trusted to indicate his own needs; the university authorities need concern themselves only as to his competence and their own ability to respond. Leisure without responsibility serves no useful purpose, and adequate pay is necessary to give fruitfulness to leisure or freedom. Men should not be encouraged to undertake research in order to gain professorships. Rather they should gain professorships in order to make research fruitful. A university need not provide for research fellowships or research professorships. If it possesses the man in a thousand who can be best used by such provision, it can build a chair about him and his needs, this chair to be abolished at once when the incumbency shall cease. We should grant freedom from cheap and sterile activity—from reading papers, sharpening knives, and copying letters; from superfluous committee meetings, and from routine work that any subaltern could do just as well; and, above all, from the thousand makeshifts of poverty. This relief is far more needed than relief from teaching.

Says a correspondent:

Once in a generation, perhaps, appears a man whose work is so important that he should be entirely freed from instruction, and as much as possible from administration; Darwin an illustration. Otherwise the importance of bringing the men of first- and second-rate training and working power into contact with receptive pupils is so great as considerably to outweigh the value of any scientific investigations they might make if left entirely free from teaching; Agassiz is a case in point. Anton De Bary was one of the ablest investigators of his generation (he died in 1887). But all his brilliant work would sooner or later have been accomplished by, not one person, but a considerable number of other people, and as it lay in the then advanced field involving microscopical appliances and technique, the great improvement in modern methods have enabled men to do some of his work better than he did it, and clear up difficulties he left unsolved. His influence, however, as a teacher cannot be overestimated. The men who received inspiration and training in his laboratory are among the leaders, and, what is better perhaps, are among the sanest influences, in botanical work in their generation. Again, the pupils of De Bary's pupils are among the best influences of the younger generation.

In his students the work of a great investigator is multiplied a hundred or a thousand fold. To be thus remembered, to live thus in the spirit and methods of the generations of science that follow after us, this is for us, as university teachers, as university investigators, as men who teach through the method of research, the noblest type of fame, the worthiest conception of personal immortality.

In the preparation of this address I sent a circular note to about a hundred leading university men, and I have received a singularly valuable and suggestive series of answers.

Most of them agree in a general way with my own views already stated; or, more exactly, their agreement has helped me to form my own final opinions with more precision and more confidence. Some of them state recognized principles with novel force, while others hold views unlike my own on one or two phases of the question. A few are partially satisfied with present conditions, believing that these matters are self-regulating, and that the universities are doing all that can be done under present conditions. A few again place a higher value on the young enthusiast who thinks that he can investigate what he cannot teach, and others still are more tolerant toward the man who can teach what he cannot investigate. One correspondent places especial emphasis on the value of leisure, even though for a time our university men may not know how to use it. He says:

I think, in general, that the great lack in the American college and university is lack of leisure. The ideal seems to be that of "keeping busy" both the faculty and the students. More show of activity is thus made, and trustees are better satisfied. I believe, on the contrary, that a certain amount of guaranteed unoccupied time every day should be a distinctive feature of the academic life, both for student and for professor. Of course, if leisure were suddenly granted, we should neither of us know what to do with it and how to use it rightly. But we can't learn how to use leisure aright without having some little leisure to use. Reform might come gradually. America, it would seem, has combined the English way of keeping its instructors occupied all day with the German idea of extending the working year over three-quarters or more of the solar year. But the English tutor gets more than six months of the year to himself; and the German professor lives a much more leisurely life than the American professor can do. The consequence is, I think, that both the Englishman and the German are, at their best, better academic men than we American professors can be.

This leisure I should give to everybody, and I believe that the granting of it would in essentials answer your question. But I add this: I do not think that the number of men capable of doing research work is anything like so great as one would gather from the scientific journals (*Science*, for instance), or from the general atmosphere of faculties. The tacking-on of a graduate school to the college, and the implicit idea that every holder of a chair can direct, if he cannot himself accomplish, research work, I take to be wrong and mischievous in the extreme. In England, as there are among the students pass-men and class-men, with no jealousy or rivalry, or thought of superiority or inferiority, so there are among the teachers men who are appointed mainly to teach and men who are appointed to research offices. I think that this division should be drawn in American faculties. It should be frankly recognized that the majority of professors, however excellent their method of instruction and however wide their knowledge, are not fitted or expected to carry on original investigation.

Now to the definite answer to your question. If under existing circumstances a man is found who is capable of extended research—one who can attract young graduates to him, give and take fruitful ideas with them, found a "school" of sound scientific inquiry—then I should think that such a man ought to be highly cherished and privileged; that he should be called upon to set his own amount of teaching work. Some teaching, especially to the very beginners in his subject, he would probably always want to do. But he should, in my opinion, be freed from the intermediate work of imparting information to students in the mid-period of their training. That

such a man should be required, day in and day out, to give his best hours, to the routine of instruction, has always seemed to me to be a bit of sheer folly on the part of university authorities.

I am obliged to append a postscript. It is useless to grant leisure, whether to all alike or to a favored few, unless an adequate salary goes with it. It is pitiful to see men who are able to do new work spend their summer in summer schools, or devote what scanty time they now have to routine work for the press, for cyclopedias, etc. Even the arrangement of the sabbatical year is really farcical for men who have only their professional income to rely upon; to take it one must either have "married money" or have written a successful textbook whose sale adds to one's income. If professors engaged in research were relieved from the work of instruction, with no further change made, I am afraid that they would at once begin—most of them—to devote their leisure time to the acquisition of scholarly appurtenances and various comforts of living. I do not think that the output of research work would, at least for some time, materially increase.

But leisure without responsibility rapidly deteriorates, except with the superior man, to whom all things are possible. The fellowship system of Oxford and Cambridge in hundreds of cases has degenerated to simple graft, with the same evil effect on English education that American forms of parasitism have had on our own local politics. The sinecure and the examination paper are the two burdens borne by higher education in Great Britain—evil influences from which the American university is relatively free, though every land has its own troubles. There is, again, a distinction between instruction in a man's own line of work and the so-called routine teaching of elementary facts to boys without interest in them. The doors of our universities ought to swing more freely both ways, and the student who doesn't care for his own education should find a way out more readily than he does now.

A few of my correspondents emphasize the value of research professorships as corrective of the tendency to regard routine work as the whole function of the university. Without going quite so far as some others, one correspondent has the following suggestive words:

The burdening sense of accountability under which the American professor suffers is to my mind the real danger point of the situation. . . . It is the advancement, even the rehabilitation, of the academic career that is concerned. To render that career an inviting one for the ablest minds, to give the career the recognition—social, financial; in honor and dignity and general esteem—that it should have to serve the intellectual interests of the nation best, is the larger end in which your special problem finds a place. The present status of the professor lacks much that is desirable and possible; and part of his difficulty lies in the interpretation of his duties, and even more in the emphasis of that portion of his activities for which he is most esteemed, most rewarded. At present I should say that his advance in most institutions depends upon his serviceability to the university on committees and in its general administrative business; and next upon his ability to achieve a certain sort of popularity among the students. To subordinate these modes of estimating his services to the far more essential traits that give worth to a man's services, decided influences should be set into action. Among them I should attach high value to any emphasis of the value of research as an integral part of a professor's life-work, as one of the pre-eminent considerations that justify his place in the university faculty. Any

such recognition seems to me a decided, and at the moment a much-needed, step in advancing the academic career; and for this reason my view of your special problem takes decided and emphatic shape.

I believe that a large measure of elasticity should enter into the definite assignment of duty, that the minimum requirements should be small. We cannot accept either the German, French, or English view of the situation. We hold a man to a far more rigorous task, leave less to his decision, than do any of these foreign institutions. Our professors are more distinctly engaged to teach. Yet it seems to me so hopeless to look for the career of research in many departments of learning outside of the universities, and its presence in the university is so helpful, that the wiser solution seems to me frankly to include the research program within the larger cultural and practical ends for which universities exist, and thus to afford the professors whose interests lie that way the largest possible relief from teaching, to devote themselves to so integral a part of their function as investigation occupies.

This should apply as well to the younger men. The great point that is made in favor of the German docent system is that it leaves men free at the most energetic periods of their lives to pursue their own interests. They are accountable to no one, have acquired the privileges of teaching, but no duties other than those voluntarily assumed; they are to work out their careers as freely as they like, and frequently are given the facilities that they need. This again we cannot do; but I believe it may stand as an emphasis of the influences that our universities can wisely cherish, though they must use other means to express their esteem of this part of the academic career.

I do not see how the practical side of the issue raised can be met by any formula. Having expressed the trend that seems to me to be worth favoring, the actual determination of ways and means involves a series of practical considerations, often of local considerations, that resist formulation. Taking the provisions that the most enlightened of our universities make for research (and they are considerable), I am willing to venture the opinion, that these could be distinctly and liberally enlarged without, in my opinion, rendering the universities open to the charge of overemphasizing this portion of their functions, or of failing to interpret properly the functions of the professor and his duties toward the university from which he obtains his support.

Another correspondent attacks another phase of our difficulty, the waste of our resources through trying to do too many things. He says:

The chief factor in determining from decade to decade the actual course of study in American universities has been, as I think, the pressure of new subjects for recognition. This pressure changed the pressure of seventy-five years ago, with its slender list of subjects, into the curriculum of forty and twenty-five years ago, whose aim was to compress a bit of each sort of learning into a four-year course. When this became impossible, two courses of study were made, and then three. The ground must be covered. No one student could cover the ground, but the catalogue must do so.

The same pressure, growing always greater, caused the so-called all-round course of study to blow up from within, leaving its débris in many new and strange forms of educational practice. . . .

Finally, the same pressure which has caused the multiplication of departments has caused the multiplication of specialties within departments. Science has developed such and such new fields of learning. They demand recognition. They are recognized at such and such institu-

tions. We must recognize them here. We must cover the ground. No student can cover the ground, but the university must do so.

If a university were rich enough to cover the whole ground of learning with first-rate introductory courses on the freshman-sophomore level, and then to cover the whole ground again on the junior-senior level, with a vast array of electives, and finally to support research in a correspondingly adequate measure, we might say: Let it be so; let this limitlessly rich university do by itself what it is really the business of all the universities and learned societies combined to do. It is fine to imagine an institution where every science and every art might be studied upon every level, with no lack of money or of men, or of leisure for the men who do productive work. It is not surprising that this splendid conception, which must be the ideal of the university world as a whole, should be more or less conspicuously the ideal of particular universities. But, in point of fact, the whole university world is not at present rich enough for the full realization of this ideal. And when a single university, even the richest, attempts to do everything on every level, the inevitable failure of the undertaking is sure to appear in some way.

The failure does appear very generally in two well-known ways: first, in the cheapening of the elementary collegiate work; and, second, in the restriction of productive research work.

It is said that in the American university there is a necessary internal conflict between the collegiate interests and the university interests. My judgment is that in the larger American universities generally the greatest enemy of both these interests is the excessive expansion of the course of study.

There are obviously two ways of cutting down the amount of work which the university shall offer. We may cut down the number of departments, or we may cut down the number of courses offered by the several departments.

The first of these methods is radical. It is a grave matter to abolish a university department—not really more grave, I think, than the establishment of a new department whose justification may be doubtful—but for many and obvious reasons a procedure which university authorities must hesitate to adopt. Nevertheless, even such radical pruning may be justified. It can become a question between cutting off some large limbs and the languishing of the whole tree. I shall not be surprised if within the next generation the pressure of circumstances should force the universities to the adoption in a considerable degree of this extreme form of selection.

Meanwhile, we have at hand a much gentler, and yet scarcely less efficient, method of selection, if the departments will cut down the amount and range of work offered by them. Let me put this method of reorganizing and concentrating the course of study in the form of definite proposals. Let there be in each principal university department—

1. A fundamental elementary course.
2. A very strictly limited amount of undergraduate work beyond the introductory course.
3. All the rest of the work offered by the department strictly graduate or research work.

Without affecting the number of majors or of groups or of departments, we may very decidedly reduce the number of undergraduate courses offered. Here, as I think, is the place for the pruning-knife. The universities can cover the whole field of learning in typical introductory courses on the freshman-sophomore level. We cannot each of us by any possibility cover the ground on all higher levels. We must select. We must reject right and left subjects which

have every argument in their favor except that we cannot do them all. We must weed out the suckers as a condition of having cornstalks.

There would result apparent hardships for the undergraduate and for some members of the faculty. The undergraduate would not be able, on the one hand, to take a large proportion of his college course within one narrow field, thus becoming a specialist without becoming an educated man; and he would not be able, on the other hand, to browse far and wide over any and every field which modern learning has developed. He would find instead, however, an abundantly wide choice of majors or of groups, each offering an austere chosen list of representative courses arranged so as to make a substantial center for a college course. And this, whether or not he is to become a specialist, is, I believe, the best thing which the university of today can offer him.

I have considered in this connection also the possible hardship to the younger professors who want to have each at least a small amount of advanced work to do. I do not wish to slight this consideration, for it is an essential feature of the university life that the younger men should have the door of hope open. I have not solved this problem to my own satisfaction, but I say this: If an instructor can do important productive work, the university should try to offer him as much leisure as the value of his work appears to warrant, whether he is doing the work with students or alone. What the university cannot afford to do is to pay so dearly for elementary non-productive junior and senior work. These courses are the suckers.

4. Productive work. The freshman-sophomore fundamental courses should be the first gainers from the resources of money and leisure saved by cutting off excessive expansion. The second gainers should be the graduate and research courses. I wish to consider this second gain as it might affect the larger universities and then as it might affect the smaller ones.

a) Our greatest universities are very rich. They have great graduate schools. They have scholars who have proved to be productive men. And yet, when the total output of scholarly work done in them is compared with that done in Germany, for example, the result is generally conceded to be discouraging. In many cases little is accomplished beyond the comparatively elementary research work which has its terminus in the doctor's degree. No explanation of this result seems so probable as the fact that the German professor has, as a rule, the leisure which the American professor secures only by exception. It is doubtful whether the German rule can or should become the American one while we have the collège and the university united in one institution. We wish our greatest scholar to surrender a little of his time to the freshman. But, having asked this of him as a duty of religion, we should spare his leisure as the most precious asset of the university. We should count it a sin to require such a man to "cover the ground." We should sacrifice the catalogue, make it thin and full of holes, confine the students to a narrow range of typically good choices, and by these inconsequential sacrifices preserve for the great man his chance to do the work which he alone can do.

b) There is an evil suggestion in the air that a university should not attempt to do advanced graduate and research work unless it is very rich. I know of nothing to justify such a counsel of discouragement. The history of learning, the history of the little universities of Europe, the current history of scholarly work in America, all show that the conditions which permit a man to do productive work may be created anywhere. At the worst, some men in the smaller universities, in the little colleges, and in whatever places may seem more unlikely, will continue to prove that

creative work is free for all and is the one thing which can never be controlled by a monopoly. Wherever these men are, they prove also, directly through their pupils or indirectly through their colleagues, the vitalizing effect of research upon teaching, and so demonstrate the true bond of unity between the university and the college. No institutional conditions can wholly suppress these masters of the guild of scholars. It is, however, our main business to organize conditions which shall not tend to repress them, but which shall enable them to give their whole service to society.

In conclusion, I will say that the problem of selecting from all the things which might be done, the things which shall be done, is the most difficult and the most imperative problem confronting the whole school system. It is not an artificial problem. The school must represent civilization. When we have detected and dismissed the fads and frills, there remains the great circle of sciences and arts which will not suffer dismissal, and yet for which our long and expensive school system has not yet found enough money nor enough time. This means simply that the school has forced upon it as never before the problem of selecting its course of study.

Some of my correspondents plead for years or half-years to be devoted exclusively to research. Others think that research and advanced instruction should go on simultaneously. Still others hold that the elementary student has a special claim on a little of the time of the master. Manifestly these are special cases, to be treated each in its own way according to the man and the subject.

In a recent address Professor George H. Nuttall calls attention to the utter inadequateness of the provisions for research in universities or outside, both in England and America. Irrespective of the universities, there should be an open career of investigation in all the various fields of science. Such opportunities exist to a limited degree in our scientific bureaus, surveys, and experiment stations; but these should be greatly multiplied at the same time leaving them open to real talent only.

Says the *London Times*:

In one way or another every branch of research loses promising men, who either go into practical affairs with what knowledge they have or make research itself subservient to money-getting by selling crude inventions, by self-advertisement, or by co-operation with financiers. We have no hierarchy of students on a living-wage basis; and as a consequence we are very short of real teachers even for practical purposes. For the real teacher must be an advanced student, not a mere parrot reciting other men's work.

A valued correspondent believes in the exclusion of hack-work, summer schools, and other matters of minor importance which tend to lower the intellectual tone of the university professor. He says:

In cases where a chair is endowed for the expressed object of research, I would go so far as to say that the professor should not only not be required to lecture, but should not even be allowed to lecture, except, if he desires, he might give a course of not more than a dozen lectures confined strictly to an exposition of the subject on which he is engaged in investigating. Such chairs are very few in number, but still there are some. My reason for prohibiting lecturing in such cases is that there is always a temptation in universities for a professor to create a following by appealing

to an audience, and the tendency is to lecture more and more, with a loss of time and energy which should be spent on research itself.

Where it is not specified that the professorship is for research, my answer would be that the amount of relief from instruction ought to depend largely upon the qualifications of the professor himself. Some professors who are good lecturers and teachers, and valuable as such, are not by nature qualified to be investigators, except in a very limited sense. I see no reason why such persons should be relieved from doing what they can do well, on the chance that, if relieved from lecturing, they might do original work. At the present day there is connected with investigation an idea of superiority over the mere exposition of a subject, and most professors desire to be regarded as investigators. If, however, experience makes it probable that a professor is a good teacher, but a poor investigator, I see no reason why he should be relieved of lecturing.

There remains another and a large class of professors, some of whom are good lecturers and teachers, and some are not, but who have a capacity for good, original work, if allowed time for it. It is to this class of students that your question, as I understand it, especially applies. In this case it seems to me that the nature of the subject in which the professor is an expert should be considered. In the more special and technical subjects, those in which the largest additions to the stock of the world's knowledge is to be expected, but where that knowledge, when obtained, is such that it can be absorbed by a comparatively few advanced students, my opinion is that the professor should be allowed at least half of his time—or, better still, more than half of his time—for his own special work, and have the amount of his lecturing and teaching correspondingly reduced.

Other subjects—as, for instance, certain branches of political economy and history, and possibly branches of chemistry, physics, and biology—are of such a nature that it may be expected that the results will be of immediate value to a considerable number of students, who, furthermore, should be encouraged to become themselves investigators. In this case it is desirable that the professors should not be so pressed by the work of instructing and lecturing that they have not sufficient time and strength left for individual work in investigation. During the college term it seems to me that such persons should be allowed at least one-third of their time for their own original work, and, what is important, *all* their college vacations.

This last point seems to me to be important, especially in subjects like biology. The tendency is to increase the number of courses in what are called "summer schools," as they attract students who increase the total enrolment of a college. I object strongly to having those whose whole time during the college year has been spent in lecturing and in original work, called upon to take classes in a summer school. By all professors who amount to anything the three months of summer vacation are not spent in idleness, but used for original investigation or preparation for the lectures of the year to come.

A correspondent made the useful suggestion of occasional research professorships to be held for one year. In such appointments work well under way should have precedence over work contemplated or merely begun. He says:

It seems to me, also, that our great universities would find it a wise policy to have each a small number of highly paid research professorships, which might perhaps not be each for any specific subject but be assigned from time to time to members of the faculty, somewhat as fellowships

are now assigned to superior students. It would add greatly to the attractiveness of university life if professors could feel that there was a chance of having their salaries kept up while for a year or two they were left entirely to devote themselves to investigation.

From others, whose views in the main coincide with those of this paper, I may quote a few well put paragraphs. One writer says:

I believe that the professor is, or ought to be primarily, a teacher, and that his first duty is toward his pupils. But I think that mere instruction-giving is the lesser part of his calling. It is teaching by example that best takes root. And it is the leadership into fields of new truth of the few who have the zeal to enter that brings the largest and most permanent returns both to the professor and to his institution. The university has a right to expect of the professor that he will give the impress of his personality to both the administration and the teaching of his department. But it has no moral right to demand that he spend all his time and energy in departmental drudgery. To what extent he should be relieved of this in order that he may engage in research will depend on many things—among others, the man, the state of his department, and the stage of his researches; an important work that is nearing completion being more worthy of concessions than one just beginning.

The making of conditions for research is but a just acknowledgment of the debt the universities owe the world of knowledge and is the first step toward its repayment.

Another says:

Assuming the command of adequate resources, it seems to me that the extent to which professors engaged in research should be relieved from instruction is essentially an individual question, the answer to which is dependent on the relative values of the professor's work in research and in instruction. If the research is of exceptional value, the instruction should be limited to that which relates to the field of research or is tributary to it. Thus much is usually helpful to the research. If, on the other hand, the instructional work has markedly the higher order of merit, the research work may well be limited to that which is helpful and tributary to the instruction, as a certain amount is assumed always to be. The intermediate cases may well be subjects of special adjustment on lines intermediate between these two, precedence being given to research when it is really productive.

Men differ in regard to the relation between research and instruction. The true investigator is born, not made, and will work whether he must teach or not, but the quality and quantity of his work will be directly proportional to the time at his disposal. On the other hand the investigator who is the product of educational methods is likely to accomplish less as the time at his disposal increases.

The character of the work differs in different cases. Some lines of work require longer absences, or longer uninterrupted periods, than others.

A man who has demonstrated his ability for research should be able to command a larger proportion of his time for this purpose as he approaches mental maturity.

A distinction should be made between elementary and advanced instruction. Class work with advanced students along lines in which the instructor is personally interested as an investigator is often a great aid to research, because it permits contact with other minds, discussion,

and the statement in words of thoughts. The mental stimulus involved in this relation between instructor and student is often of great value.

On the other hand, the routine of general or elementary courses, largely attended, where the element of personal contact is mostly absent, often interferes seriously with research.

As the investigator develops, he should be more and more free from the routine work connected with instruction.

To sum up: The point of greatest importance is that the investigator should have extended periods of time free from other duties. These should be regarded, not as vacation, but as a part of his work. Certain hours in the day or certain days in the week do not meet the need of the investigator.

Another says:

My experience has convinced me that, under the system commonly followed in our universities, either the students suffer for lack of attention or research is neglected; and the more eminent the teacher, the more surely is this the case. For as a teacher's reputation grows, so does the number of his students increase; and the eminent investigator is forced either to lock himself into his study and neglect his students, or to devote his days to instruction and restrict his researches to nights, Sundays, and vacations, when mind and body are worn out. In no field is it more true than in this, that a man cannot serve two masters.

I believe that what may be termed the intensive system gives promise of affording relief to what is obviously a very undesirable situation. If the teacher will devote all his energies for one half of the year to imparting instruction and directing the researches of his advanced students, the students will probably gain more, in most cases, than they do under the present system. And the conscientious teacher will be able to devote the other half-year to research, without being constantly oppressed with the feeling that he is neglecting students who have sacrificed much in order to gain the opportunity to study with him.

Under the intensive system it would doubtless require a somewhat larger corps of teachers to care for the students than under the present system, where nominally every teacher is available for instruction all of the time. But a professor working under the intensive system would do very much more than half the amount of instruction that he does under the present system; hence the necessary increase in teachers would be less than might appear at first sight.

Another correspondent says:

I hold that it is the duty of the university to advance knowledge as well as to supply instruction. So far as possible, professors should be permitted to do the work for which they are most competent. If a man is able to advance knowledge to an important extent—there are, in fact, not many such men—it seems to me that he should be required to give only so much instruction as would be fruitful for his research work. A professor can often do the most for his students by going on with his own work, thus imparting some of his spirit to them.

Another says:

I have always had definite convictions on this subject, which have come in part from personal inclination and in part from a remark you made to me during an impressionable period, in appreciation of a research man in a neighboring institution: "He manages to use all of his time and energy for his own work."

In every institution there are men who glory in their large classes and the popularity that comes with them, and there are others who would be just as happy in their own work without any students—as long as their salary came regularly. I see nothing inherently wrong in the position of either one of the men, and see no reason why the one should look on the other with disdain, or the other on the one with envy.

Still another says:

In my opinion, professors engaged in productive research should meet with every encouragement and assistance from the university authorities. They should be amply provided with the books, the materials, and the implements needed in research, and a reasonable portion of their working time should be set free for that purpose. What proportion should be thus set free may not admit of very definite statement, but it would seem that a well-endowed institution should so limit the scope of its work, and the consequent amount of instruction offered, that its productive scholars could apply at the least one-half of their working time in advancing knowledge. It is my opinion that increase of knowledge, considered by itself alone, should be one of the definite aims of a university. But if this be not granted, and the primary function of the university be considered the giving of instruction, it is just as essential that the professors should be investigators. Only those who are themselves engaged in research can lead students beyond the elementary phases of their subjects.

Another says:

I should say that it is at the present time much more important that the general principle of granting time for research be recognized by the universities than that any special fraction of such time be agreed upon. The complexities of the various factors entering into the particular exigencies of particular cases would in any event make it extremely difficult to settle wisely upon such a fraction, and I certainly have no fixed opinion as to the amount which ought to be thus assigned.

Where men are proved capable of profitable research, and where institutions are able to make good the loss in the amount of instruction offered, I think a third of a man's time every other year could with great profit to the university be set aside for investigation. In some cases this time would be best invested if scattered over the whole year. In other cases it would be more efficiently spent if concentrated within some given period of three to six months. In certain unusual cases it is undoubtedly judicious to give a larger amount of time than this proposal provides for. Moreover, in some cases research can be carried on with entire success in connection with advanced class work; e. g., certain forms of philological studies. In such instances there is obviously less propriety in setting aside special time for investigation. But, as I said at the outset, these complexities are too numerous for me to attempt handling. It will be a great step forward if the principle of recognition of research as an integral part of a first-class instructor's duties can be gained.

Another says:

In general, I may say that the instructor who does not investigate is exceedingly likely to get into ruts and will soon become a "back number." There is nothing like research to keep one posted on the work done by others. It is a constant incentive to reading. It keeps one posted not only in his special field, but, from the interrelationship of problems, it gives him constantly an outlook over what is occurring in other lines.

To what extent the instructor should be relieved from instruction is another matter. If he be entirely relieved, the students of the institution receive practically no benefit from his researches, while he loses all influence over the students. In most cases to allow a professor to devote himself entirely to research would be a violation of trust funds supporting his chair.

Certainly, in my opinion, every person connected with an educational institution should give some instruction, and I think it would be well if the heads of departments should have some hand in the teaching of at least one elementary class. It would tend to keep at least one foot on the earth.

A correspondent says:

There are many problems of research which require a great deal of time-consuming work in the preparation of material for the study. I believe they ought to have help in the nature of assistants to do a great deal of this kind of work in preparing the material for the study of investigation. A professor of horticulture or agriculture is not required to plow his ground, cultivate and harvest his crops. He is given help to do this. He plans the research, oversees perhaps the preparation of the ground, and the cultivation and the harvesting, but makes his study from the results of this manual labor which has been done by others. I believe similar help should be given to professors engaged in research in some of the lines of biological work.

Another says:

Regarding the relation of research to instruction, I feel very strongly that no instructor of upper-class men in the university should teach a subject if he has not come to know the values of its elements through testing some of them under new conditions. Even if the instructor be considered apart from his chosen field, simply as an instrument for the stimulation of the thinking power, he is not in a position to teach his subject unless he has some acquaintance with creative work. If I am correct in this view, it would be true that professors engaged in research have also a very important work to perform in instruction.

Another says:

I believe that at least half the time of every professor should be definitely set aside for research, provided said professor has shown the ability and energy to devote this time for such purpose. The enhanced reputation which professors engaged in research enjoy with their students, and the more comprehensive and critical value which it gives to their lectures and other forms of instruction, will more than compensate their institutions for the time set aside for this purpose. It is not men of routine, but men of original ideas, who are the most stimulating to students, and originality can be generated and kept alive only by research. Proof of this is found in the fact that the most inspiring teachers of all time have been investigators. Investigation cannot be carried on with the brain fatigued by excessive teaching and excessive hours of administration. In many cases I believe the number of lectures and recitation hours could be substantially reduced, with advantage both to the professors and to the students, in institutions, where, owing to limited means, a large corps cannot be employed.

Another says:

An ideal research position, to my mind, would be one in which there was some teaching, but never enough to endanger the *continuity* of research.

Another says:

I should be very sorry to see our universities making any formal arrangements with their officers looking toward supporting them in research. In my judgment, that would divert the universities from their own proper work, and would give us a low grade of research. Hitherto research work has been the expression of the spontaneous interest and energy of the searcher, and I look with suspicion on any intrusion of the spirit of working for pay into this field. Yet I can see that in individual instances, where it is known that a man is engaged in an important research, it would be wise to relieve him of some portion of his other daily work. But I should hope such indulgence would never go to the point of making research the subject of contract.

Another says:

The scholarly men make the best teachers. I am not at all sure that the practice of teaching benefits the man of research. This would seem to be the case with the direction of the research of capable graduate students; but elementary teaching may be not only irrelevant to the scholarly interest, but distracting and fatiguing to the point of the exhaustion of energy and the atrophy of interest. I do feel, however, that the man of research is the safest person to whom to intrust the college student. Such a teacher is sure to win and to merit respect, for he measures himself by standards that are objective and intelligible to all.

The teacher who is not a scholar may be a winning and beneficent personality, but he is more likely to be a self-constituted oracle whose dilettantism is quite patent to the average undergraduate.

It seems to me clear that no educational system can afford to be dependent upon the chances of genius and temperament, even where these do slightly favor the unscholarly man. But, as a matter of fact, the chances seem to favor the scholar.

The great academic personalities seem, to my recollection, to have been men who enjoyed the dignity and the straightforwardness of scholars.

I believe therefore, that it is to the advantage of the university to have the same men discover and teach the truth. Professors should not be relieved of instruction, if this is to result in the specialization of the teaching function and the research function.

Furthermore, I do not see any possibility of fairly discriminating between individuals in this respect. The one or the other class (and under present conditions it is bound to be the teaching class, because of the recognition the scholar receives from outside) will be a degraded class, and this I should imagine to be fruitful of discord and jealousy.

I cannot see that a moderate amount of instruction can interfere with a man's scholarship, and it is likely to afford him the sort of social service that he needs for his manhood.

I should suppose, then, that it would be wisest to make the required amount of instruction uniform, and fix it at a moderate number of hours—say ten per week.

A correspondent says:

In many cases the complaints of professors that they have not sufficient time for research work because of the undue amount of instructional work required of them are not well founded, but are rather due to an inherent incapacity upon the part of the men to do effective research work, which they attribute to the large amount of teaching which they have to accomplish, rather than to a natural dislike of hard work.

Another says:

Roughly stated, it is the function of a university to discover and disseminate truth, to train scholars, and to develop character. The relative stress laid upon these competing ends must vary with the conditions surrounding the institution, and in a specific case must be affected by the characteristics of the teacher, of his subject, and of his students, and also by the public opinion in the constituency of the institution and in its faculty and trustees. That public opinion seems to me to be adjusted into rough conformity with what average amount of instruction should be expected from the average teacher, and I should be disposed to regard this as the best basis available, to be deviated from in individual cases as circumstances might indicate.

In my own case, for example, I doubt that it would be wise for Cornell University to leave me more free from duties of instruction with the deliberate purpose of letting me give more time to research. Such relief would make me less effective, I am convinced, as a teacher, and could be justified only if it was felt that my efficiency in research was greater than my efficiency as a teacher, or else that the need for research in my special field was greater. In some lines of work I believe it might be wise for the institution to provide a small group of junior appointees, who might give all their time to research, and to allow ready transfer from the class of junior appointees, whose main work was teaching, to the class whose sole work was research, and the other way.

Says another:

I am strongly of the opinion that a university which is aiming at the highest ideals of university work should, when it finds men of real and proved capacity for original research of a high order, relieve them as far as possible of educational and administrative drudgery, though there can be no doubt that our universities probably could not afford to do this in the case of a very large number of their professors; nor perhaps would this be desirable. In point of fact, however, men of the type I have in mind are not numerous in any university. I believe the activity of such men in a university brings in a very rich return through the atmosphere and example which it creates, and it seems to me that the best service of such men to their university lies in their own research work, and that of the advanced students who come under their direction and influence.

I believe that such a man, for example, as Balfour did far more for his university in this way than through his lectures and other routine work; but I also think that to remove such men wholly from contact with the students would be a mistake from every point of view. My feeling is that such men should be relieved as far as possible from the drudgery of class work, elementary laboratory instruction, and, above all, from administrative detail, for which they are very often unfitted by taste and temperament. I do not have in mind so much the time that is given to these things as the diversion of attention in directions wholly foreign to that in which their original work lies, and the destruction of that unconscious cerebration which is one of the most important factors in working out scientific results.

At the same time, I fully recognize that a university is also a body of students that must be systematically taught, and I do not think that the work of the effective teacher should be considered as in any way inferior to that of the investigator, nor should professors whose first instinct is that of the teacher be led to feel that their advancement depends on the accomplishment of original work.

You doubtless know better than I that investigation that is done under pressure of this kind is

oftentimes a rather poor pretense. The tendency seems to me to be to differentiate these two types of university professors, and it is probably, on the whole, a good division of labor.

One thing seems to me quite certain, and that is that our universities will not attain their real aim until they are prepared to give full opportunities for research to men of the first type I have indicated. These are the men who form the real nucleus of the university, and their presence and labors seem to me of more importance, from the point of view of real university work, than all the rest of our educational machinery put together.

President Woodward, of the Carnegie Institution, says:

The way I put it to myself is this: Can we expect a college professor to do as good work of research for our Institution as we might expect from him if he were taken over to the Institution and had no work but that of research? Much experience convinces me that work of instruction is very valuable to a man who is pursuing investigation. On the other hand, I find that most men who are pursuing at once work of instruction and investigation in the colleges are giving only the smaller fraction of their time to investigation. Their first duty is toward the institutions with which they are connected, and any man who is efficient as an investigator is also likely to be efficient as an administrator, and as a worker on the numerous committees essential to educational institutions. My personal experience and observation would seem to show that here again the work of investigation is commonly given second place.

On one point there is little or no room for doubt, namely, that the work of investigation done by professors and instructors in our American universities has only lately come to be justly appreciated, especially by trustees and regents.

From the point of view of an educational institution, there is likewise another point quite clear to me, namely that no man can be an instructor of the highest grade without he is also simultaneously at work in some sort of research connected with his work of instruction.

Here I must close my quotations, resisting all temptation to continue; for in fifty other letters I find important considerations pithily stated. But as these all agree more or less distinctly with my own thesis, I must suppress them for the present, on the principle adopted many centuries ago in burning the library at Alexandria.

TO WHAT EXTENT SHOULD THE UNIVERSITY INVESTIGATOR BE RELIEVED FROM TEACHING?

PAPER PREPARED BY PRESIDENT ARTHUR T. HADLEY, AND PRESENTED ON BEHALF OF
YALE UNIVERSITY, BY PROFESSOR THEODORE S. WOOLSEY

Every good American University has among its professors men of two classes: some whom it values for their ability in teaching old truth, and others whom it values for their ability in bringing out new truth. Men of the former type are commonly said to be engaged in instruction; men of the latter type are commonly said to be engaged in research. These names are somewhat misleading, but they are so current that we cannot avoid using them. Our recitation rooms and lecture halls are in charge of men of the former class. Our labo-

ratories, our museums, and our observatories are supposed to be in charge of men of the latter class. It is hard to say just how large the two groups are numerically, or how far the men of the second group are actually relieved from classroom teaching in our different universities. The lines of demarkation are so shadowy that no statistical inquiry on these points is possible. Nor is such an inquiry necessary for the purpose in hand. The question before us is, not whether we have enough research or enough instruction, but whether we shall gain or lose by an attempt to separate the two more fully than we do at present.

On this question I am prepared to take strong ground in favor of the negative. We do not want the two things separated, we want them combined.

The men who are engaged in the development of new truth should be impressed with the fact that it is their duty to *teach* this truth, as well as to discover it. They should understand that research without instruction is as valueless as faith without works. They should feel that they are relieved from classroom duties, not because their work of discovery is something sacred and precious in itself, but because they can teach the kind of truth which they are developing better through publications and collections and in the form of conversations with advanced students than through the conventional medium of lecture or recitation. If you tell a man that he is set apart from others in a "research professorship," you encourage him to ignore these teaching duties. You seem to separate his services from those of his colleagues—to value their work for what they give to others and to value his for what it is in itself. There are few men whose character is strong enough to stand the strain which is placed upon them by such a position. It is specially dangerous to men who, having the possibilities of genius, are also subject to its infirmities.

Meantime the men who are engaged in teaching old truth to college classes should be impressed with the fact that their teaching will be tenfold better if they can *investigate*, as well as teach. If their instruction is based upon research, it will be vital; if their instruction is not based upon research, it will be stale. Under pressure of financial necessity we may, at times, use too much of their strength in the actual work of the classroom; but we should guard ourselves against any educational terminology or educational theory which will countenance the belief that this is a proper policy. No matter how old the subjects which he teaches, we do grave injustice both to an instructor and to his classes, if we utilize him as an instructor alone. Whether he accepts this limitation of his activity as something which he cannot help, or chafes and frets under it as an unjust deprivation, the result is in either case disastrous to the man and to the university that employs him. Between the man who is satisfied because he is second-rate and the man who is dissatisfied because he is not first-rate there is little to choose. Neither of them represents the kind of teacher we want.

We are not dealing with an ordinary case of division of labor. The great argument for division of labor is that it makes each man more expert in his own field of work by allowing him to concentrate his attention on that field alone, instead of extending it over others. But the college professor who is relieved of the duty of research in order that he may give

his whole time to instruction becomes a worse instructor instead of a better one; and he who is relieved of the duty of instruction in order that he may give his whole time to research is, to say the least, liable to the same danger.

But this loss of individual power on the part of the professors is not the only evil to which the creation of a separate class of research professors exposes us. The existence of such a class may become a menace to the general spirit of co-operation and efficiency which is so essential not only to good teaching, but to scientific progress. In selecting such men for special liberty, we may unconsciously restrict that general liberty of thought and teaching which every good university ought to promote. The men thus selected are under strong temptation to care too much for their own ideas and too little for giving stimulus to the ideas of others. They will unconsciously subordinate the laboratories and collections of the university to their own purposes until these laboratories and collections are inadequately used. They will unconsciously stand in the way of younger men who wish to develop researches of their own, because they think that they themselves are appointed to do the research work and that the younger men are hired to act as their helpers. We all remember the conversation in which Admiral Dewey is represented by the humorist as having held with Hobson when the latter went out to Manila. "Who are you?" "I'm a hero." "We don't want any such out here; I do all the hero business in Manila." I do not mean that every professor engaged in research is of the type here satirized. There are many investigators who are singularly helpful to their subordinates, and who are quite as much interested in promoting the researches of these subordinates as they are in developing their own. But when we go over the list of these men, it will be found that they are just the ones who have the teaching instinct; the ones who are most ready to combine instruction with research; the ones who would most earnestly repudiate the suggestion that the investigators formed a separate class from the teachers, and a higher one. They are the men who are looking, not only for new results, but for new men to produce the results.

As John Morley well says, the essential thing for progress is to leave all ways open for the advent of your hero, for no man can possibly know by which road he will come; and this is as true in the affairs of science as it is in the affairs of government. Every university, as soon as it has money enough to pay men for anything besides classroom work, should see that the opportunities for research are developed as widely as possible among its teaching force. Some will use these opportunities badly; a much larger number will use them well. The aggregate result of such a policy will, I am confident, be profitable to the students and to the teaching force; profitable to the reputation of the university and to the progress of science as a whole. Every instructor who is devoting his time and strength to university work should have the opportunity to give at least one course on a department of his subject for which he really cares—a course which he gives not because the university needs that particular subject or branch of the subject in its schedule, but because he himself wants to study and teach it, and believes that he can make something more out of it than others have done before him. In connection with such courses the younger

instructors should be given every facility to use the research laboratories in the way that *they* think they ought to be used, rather than in the way the head of the department thinks they ought to be used. I do not mean that we should go so far as to introduce the German system of *Docentes*. The arrangements of our classes and the demands upon our teaching force are such that a radical change of this kind seems impossible. But it is perfectly possible and exceedingly important to give our younger instructors some of the advantages which the German system affords.

Of course, this will not be an easy thing to attain. There are financial obstacles, and there are also administrative ones. The number of students to be taught in the regular classes is so great that faculty committees will want to use the whole time of the younger instructors for regular work, and will begrudge every hour that is spent in methods which they regard as irregular. The laboratory space is so limited in proportion to the demands upon it that the heads of departments will be inclined to use it all for the researches in which they have confidence, and will doubt the wisdom of putting any part of this limited space under the control of younger men whose work is avowedly experimental, and of whose good judgment the older men are not sanguine. But it is worth while to spend the effort necessary to overcome these obstacles. The real freedom of teaching which exists in a place managed for the young men and not for the old ones makes it far more attractive to progressive and ambitious students. The reduction in quantity of classroom work on the part of the younger instructors is more than compensated by the improvement in quality. The gain from the successful experiments more than compensates the loss from the unsuccessful ones. The existence of a spirit of independent research on the part of a large body of young men makes such a university a better place in which to teach and study than one where a few men of more advanced years, and perhaps more cautious temperament, are engaged in carrying out their own preconceived ideas. Over and over again it has been proved that an atmosphere of independent thought and independent discussion counts for more in stimulating discovery than perfection of instruments or scholarly guidance by those who have already made their reputation. Look back at the history of scientific investigation, and you will find it most active, not where large sums of money are placed in the hands of a few men to facilitate their individual researches, but where those sums, or even very much smaller ones, are distributed among a considerable body of young men working side by side in independent activity.

Some universities will find it relatively easy to give the younger instructors freedom necessary for making discoveries and experiments of their own, and others will find it very difficult; for some have money to spend upon research and others have little. But I am convinced that, whether the sum thus available be one thousand dollars, or ten thousand, or a hundred thousand, it is best used by distributing as widely as possible the opportunities which it gives and the chance of using those opportunities in the manner that each man may desire for himself.

But the younger instructors are not the only ones who need more freedom. The

older ones also have their burdens, though of a somewhat different kind. The pressure of routine often lies as heavy upon the experienced man as the pressure of authority lies upon the man who has his career before him; and the better a man teaches, the more his routine duties crowd upon him as he gets older. It is the duty of the university authorities to relieve this pressure. It is suicidal for them to allow a successful instructor to be swamped by the number of students who wish to hear him. He should be given increased time for research, by the diminution of his lecture hours where that is possible, and in any event by the appointment of readers, quiz masters, demonstrators, and other assistants who can relieve him of burdensome parts of his work. It is not necessary that the services of these men should be very expensive. In a university which has a large force of graduate students there are always men on fellowships who can be asked to do this, or men without fellowships who are willing to do it for comparatively small compensation. If a fellow refuses to give this help, holding that he is employed for research and that his time is too valuable for such work, the remedy is simple. Send him away from the university. The more promptly you get rid of him the better. A vigorous policy of this kind is necessary in order to prevent men who have proved their capacity to teach from being overburdened with teaching duties and placed at an actual disadvantage as compared with those who do not teach so well. I have a case in mind where there are two men working side by side in the same subject, one of whom can teach classes and the other cannot. Under the financial limitations of the department the man who can teach classes has to spend all his time in this way, while the man who cannot teach classes is given time for research; and the man who is thus turned into research because he cannot teach believes that this fact is a badge of superiority instead of inferiority. By giving liberal assistance to our teachers, and by that policy only, can we protect the men who are able to study and to instruct also from the encroachments of those who, being unable to instruct, claim superior facilities for study.

Do not let me be misunderstood in all this. I recognize that there is a great deal of teaching, and of very valuable teaching, which is not done in the classroom and which does not take the form of lectures, of recitations, or even of laboratory supervision. There are some men who naturally teach in these ways; there are others who more naturally teach by their writings, by their conversations, or by their intelligent suggestions for the work of others. These latter forms of teaching are as important as any; and a man who can make his researches available in these ways is as useful an instructor as anyone in the university. A failure to recognize this fact has prevented some of the best men from finding the employment or receiving the salaries which their real work as teachers merited. Those who have seen the value of these men in a university, and have not seen how much teaching they could do outside of the classroom, have supposed that the only way in which to pay them full salaries was to make them "research" professors. Pay them full salaries, by all means; but pay them for their teaching. Let them understand that they are part of the teaching force, and are simply doing their teaching in a different way from some other men. Let

them understand that they are not employed for research as distinct from instruction, but for the development and teaching of new truth as distinct from the development and teaching of old truth. Let them see that they are not set apart from their colleagues to be guarded and perhaps sterilized. Let them feel that their research is not valuable until it is made useful to others. Let them understand that withdrawal from the lecture-room and relief from the duties of supervising elementary students carry with them a larger obligation to publish as fully as possible the results of all discoveries; to organize departments intelligently; to train up young men who can teach; and to make liberal room for such men, instead of trying to get in their way when their work becomes popular.

Impress upon the research men an obligation to teach others, and demand that they give evidence that they are meeting that obligation. Free the best teachers from the unnecessary burdens due to their popularity, and insist that they shall avail themselves of the chance thus afforded to make researches of their own. Give to our younger men, who have still to prove what they can do both in teaching and in research, the widest opportunity for independent investigation and independent management of their classes. Thus, and thus only, can we avoid the dangers to which we are exposed at the hands of those who would separate research from instruction.

DISCUSSION OF TO WHAT EXTENT SHOULD THE UNIVERSITY INVESTIGATOR BE RELIEVED FROM TEACHING

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. WEST: Referring to Mr. Jordan's paper, one of the hardest things in my experience is to see that the Fellow, who is usually a man of modest means, has the time for his studies, and anything which will encroach upon that ought to be limited to just enough, and no more, to test his powers as a good teacher. Our Fellows are ever ready to drop study to do other things, and I am afraid we are commercializing the Fellow a little too much.

MR. REMSEN: If I were asked to answer the question before us in as few words as possible, I should be inclined to say that they should be relieved as far as they can take advantage of the time afforded. I do not think it desirable to relieve them entirely. Teaching is a very important part of the work of the investigator, not teaching by example alone, but actual teaching in the classroom; it reacts upon the professor himself. I have taught for years the elements of the subject to which I have devoted my time, and I believe that it is of great advantage for every educator to teach the elements of his subjects and to get those elements in their proper relations. He ought to do better teaching every year, and only when he ceases to grow is he to be relieved of his work. The sign of decay is the failure to see new relations and to indicate these by his teaching.

I have seen some disastrous results of relieving men of a part of the work to which they had devoted their earlier years. [Here Mr. Remsen gave four cases to illustrate his point.] I don't believe it is wise to relieve the university professor, no matter what his investigations may be, from university teaching.

There have been a number of sarcastic references to research. I am inclined to treat the young investigator a little more kindly. You cannot always get good results at first, but it is just as well to keep your eye on the young investigator and to encourage him. I feel very kindly toward the young man who is trying to do something. I will not even question his motive. If he will do the work, there is some hope for him. There is no chance for development unless there is a beginning.

There is a great deal of scattered research work that may not seem of great value, but someone will come along and see what it all means. In the intervening stages the world does not understand the work that the little investigator is doing. It is the bringing together of the little results that gives what the man of big results would not get at all otherwise.

We cannot afford to put men aside who are doing the little things and wait for the big men. If we are only going to encourage those who are doing the big things, we shall be short of men in our universities. Suppose we say we shall only appoint first-class teachers in our universities. I ask you to draw your own conclusions as to the number who would be left. And we cannot always tell whether a poor teacher will develop into a first-class teacher.

We need all the research men we can get, for the sake of the atmosphere they create; but certain influences now tend to remove the investigator from the universities.. I refer to the influence that is likely to be exerted upon the universities by such institutions as the Carnegie Institution and the Rockefeller Institute of New York. They are beginning to call men who would be valuable in the universities. We are shorthanded in this country. We cannot begin to supply the demand for investigators.

MR. JAMES: I am glad to find such a consensus of opinion against systematically relieving professors engaged in research work from instruction. The separation can be made of individuals, and made effectual enough, so that if men who cannot teach well but who can make investigations are found, they personally can be relieved. Professor Ostwald's conclusion after inquiries he had made into the lives of professors is about as follows: After sixty a man loses a great deal of his general energy; his ability to do new things is not peculiarly great; but, in return for this, he becomes more expert in the ruts which he has cultivated; and at the age of seventy, he may be at his very best as a teacher.

I agree with Professor Remsen about these small peppercorns of investigation done by young men; this thing must go on because it is valuable. If you wish in this world to have anything at all, you must have too much of it. You must have this pedantic small business which may call itself investigation; but you must have the irony too. The material has to be supplied in this excessive manner, and the irony and sarcasm have to sift it out; and, in the end, God's work gets done.

MR. DUNIWAY: The university should have a friendly attitude of mind toward the encouragement and cultivation of the young man who, under the difficulties of teaching many subjects and many students, still feels that he has in himself the ability to do valuable investigation, who hopes that in the future he may become a commanding figure in the world of research. Let the young man prove himself. If he proves himself insufficient, the "sarcasm" will determine the

matter. The realm of knowledge may be compared to an unexplored mountain district there must be many prospectors and many rocks analyzed with many failures, that good mines and minerals may be found for the benefit of humanity.

MR. BURTON: I am in agreement with the views of the two papers, and I think the faculty I represent would be also. The professor who has proved himself a skilful investigator may render his largest service to the university by combining with his own work that of training the more advanced students in the work of investigation. May he not suitably find relief from a certain kind of teaching in order that he may accomplish another?

Is there not some danger that we shall underestimate the value to the university of the man whose ability as an investigator is slight, relative to his ability to teach? Is not the teaching of the ordinary student, after all, a very large part of the work of the university? Ought not the men who do this work in every way to be honored as highly as the former class?

MR. WHEELER: The main point is that research and instruction are not to be dissevered in the university. The university is a place where both shall be joined in one and the same vital existence; but when it comes to carrying out the good things that were said in both the papers, I should note, I think, a possibility of grave difficulty. I do not believe we can lay down rules as easily as they have been laid down this forenoon. I think it is an injury to our universities to hamper them with restrictions, even as they are here proposed. In the first place, how are we to tell what instruction is, and how are we to tell what research is? I have come to believe that there are really two kinds of investigators; that there is a difference between *research* and *research*. When a man says he has not any time for his *research* work, it is evident he ought not to have. If a man has a freshman laboratory in physics, and is not using that opportunity for research work, then he might as well quit. It is only a difference of shallow men's definitions of terms. The man who is holding what is called a research professorship is very likely, under the stipulation that he shall be relieved from the ordinary teaching, to be doing more good instruction in the university than the man who is perfunctorily taking care of a division of laboratory physics containing one hundred freshmen. He is very likely to be stimulating those about him to work with him. The only real instruction I ever got in Germany was in the personal association with the various professors on the hillsides of Jena and Heidelberg or just as informally in their seminaries. Those who are really worth anything in the sense we are talking about, don't wish to be relieved from helping other men. The men in this university who are holding the so-called research professorships all yearn to teach.

I agree with the doctrine, but when it comes to the definition of terms and the application I should be very cautious. There are so many kinds of men, so many kinds of teaching. I would lay the whole emphasis upon the necessity of more research in connection with teaching than of less teaching in connection with research. I doubt whether there is any teaching, after all, that tends toward the salvation of the world, which is not put in the form of discovery of truth—whether any other form energizes human life and makes character. I very much doubt whether our standard forms of conveying instruction are of value. Some men can teach by lectures, but most men cannot. Most lecturing is a process of deceiving the young. I doubt, too, if our great routine of laboratory experiments take real hold on life; and, after all, out of the great mass of people who swarm these laboratories, if very many come to have any very vital knowledge. Few become creative. Is there not a false orthodoxy of education here just as in the lecture?

MR. VAN HISE: For many years I have spent part of the time at a university and a part of the time at a government bureau, and have had an opportunity to catch the spirit of both; and I believe that the advantage is, upon the whole, with the university, so far as fruitful and inspiring ideas are concerned. A man in Washington who is expected to give his entire time to investigation will, upon the average, turn out more routine investigative work in a year than a professor. On the other hand, the stimulating and inspiring influence of instruction is lacking. The man tends, in most cases, to follow a definite specialty on some narrow lines; whereas the big man in the university goes broadly over his subject, in an elementary course, thinks ahead over his special lines, and puts those additional thoughts in their relations with the older ideas, and so advances his subject in a broader way than do most men in the bureau. I think, if we compare a half-dozen universities with a half-dozen scientific bureaus, we shall find that, so far as great ideas are concerned, the advantage is upon the side of the university.

MR. JORDAN: The fact is, where men are given leisure and an opportunity to do something, without being held to it, without any responsibility of any sort, their positions degenerate into sinecures.

THIRD SESSION

THE REACTION OF GRADUATE WORK ON THE OTHER WORK OF THE UNIVERSITY

PAPER PREPARED BY PRESIDENT JACOB GOULD SCHURMAN, AND PRESENTED ON BEHALF OF CORNELL UNIVERSITY BY PROFESSOR CLYDE AUGUSTUS DUNIWAY, OF LELAND STANFORD JUNIOR UNIVERSITY

In dealing with this subject, it seems to me more profitable to describe the results of our experience at Cornell University than to attempt to treat the subject from more general points of view. And in order that I might have correct impressions regarding Cornell University, I have sent an inquiry on the subject to every member of the university faculty, which consists of the professors and assistant professors of the University. I have had replies from nearly all of them, and this paper is prepared on the basis of my own observations and experience and in the light of those replies.

In order that the facts and circumstances may be before you, I will say briefly that, taking the statistics for the last academic year, which ended September 30, 1905, Cornell University enrolled 3,841 students. Or, if we exclude the Summer Session and the Winter School in Agriculture, and take account only of the students enrolled during the academic year—from September to June—the number was 3,318. Of this enrolment about 10 per cent.—or, to be exact, 348—were women; the remainder, 2,970, were men. The total enrolment for the year 1905-6 has not yet been made up, though it is considerably larger than the figures just given for 1904-5; but the figures for the Graduate Department are available. In the Graduate Department there are enrolled 222 students (of whom 190 are men and 32 women),

who are graduates of 85 different colleges or universities, American or foreign. Besides these graduates who are enrolled in the Graduate Department, and who are, as a rule, candidates for advanced degrees, there are 234 graduates of other colleges and universities enrolled in technical and other undergraduate courses of the University. While it is obvious that this latter group of students, by their training, maturity, and diligence, exercises a very important and salutary influence on undergraduates, I take no further account of them in this paper. Of the 222 graduate students enrolled in the Graduate Department, 110, or just half, are candidates for the Ph.D. degree, and 33 are candidates for the A.M. degree. Of the rest the majority are candidates for the degree of Master of Science or Master of Engineering, though 17 are not candidates for any degree.

Classifying these 222 graduate students with reference to the subjects which they selected as their major, I find that they fall into three practically equal classes. A third of them have for their major subject languages, philosophy, history, economics, and mathematics; another third have physics, chemistry, and the biological sciences; and the remaining third, who are enrolled in the technical courses, have for their major subject such pure or applied sciences as agriculture, horticulture, engineering, etc.

The influence which the graduate students exert at Cornell University is greatly increased by the organization, or perhaps I might say the lack of organization, of the Graduate Department. Although it constitutes, for purposes of administration, a separate department under the control of the University Faculty, there is in reality no separate organization of the graduate students, so far as university work is concerned. That is to say, it has not yet been the policy of the University to establish a separate department of graduate study, with professors and courses marked off from the rest of the University. Even in the announcement of courses of study no complete, careful discrimination has been made between courses of study offered to undergraduates and to graduates, and it would be difficult to draw a line of demarkation between the two. There are many graduate students a part of whose work is really undergraduate, and a considerable number of undergraduate students whose work is really graduate work. In this way the two classes of students mingle and influence each other. The same association between graduate and undergraduate students takes place outside of the University, where to a certain extent graduate students mingle with undergraduate students through the medium of their fraternities and their social organizations.

With these explanatory remarks I return to the three groups into which, having regard to their major subjects, I divided our graduate students. And I desire, first of all, to make some observations on the group who are enrolled as graduate students in the technical departments. I have already said that in these departments we have a goodly number of graduates of other colleges enrolled as undergraduates. But I am now speaking, not of these, but of the graduates in technical courses who are admitted to the Graduate Department. These fall into two groups: first, the group of recent graduates who are working for the Master's degree, and, secondly, the older and more fully equipped graduates, who come, sometimes from the practice of the profession, to pursue definite lines of original

research. Of the graduate students in our technical departments by far the larger number belong to the first class just mentioned. These men pursue advanced undergraduate studies with a view to enlarging and broadening their knowledge of the field chosen. They engage, it is true, in some investigation; but the emphasis is rather on acquisition than on research. Consequently, the influence of this class of graduate students, who, as I have said, constitute the larger portion of all graduate students in the technical departments, is only in degree different from that exercised by the graduates who are enrolled as undergraduates, or by good undergraduate students themselves. That is to say, being as a rule men of exceptional ability and of great industry, their presence and successful work in the classes set a high standard, which is a very beneficial stimulus to the undergraduate members of the class.

Very different is the effect of the thoroughly equipped graduate who enrolls in the technical department to do some special research. Not only is his experimental work an object-lesson to the undergraduates who assist him; not only do they become acquainted, as a consequence, with the more refined methods of experimental work; but from this co-operation with an independent investigator they receive a training which the ordinary laboratory does not afford them, and come under a unique stimulus making for independent mental development. Such graduate students may do more for the undergraduates than even members of the faculty. And the stimulus which such men give to the professors themselves is something which the professors in the technical departments, in common with the professors in all other departments, very emphatically signalize.

As I have already said, the great majority of graduate students enrolled in the technical departments are candidates for a Master's degree. They do not, as a rule, spend more than one year in graduate study. This study is consequently more related to undergraduate work than to graduate work, if the distinguishing mark of the latter be independent investigation. For such independent work these students in the first year of their graduate course are not prepared. Only a small group of graduates who take up graduate work in the technical departments, for the solution of special problems which involve original research, exercise a distinctive influence on the other work of those departments. And it does not seem likely that the number of such men will increase rapidly, as many, and perhaps the majority, of the professors in the technical departments believe that the proper graduate work for men intending to become active practitioners consists in the active practice of their professions in the outside world, entered into immediately after graduation at the University.

While the foregoing remarks are in general true of graduate study in all technical and professional courses, they need in individual cases some modification. Those graduate students in horticulture and agriculture whose work is mainly in the biological and chemical sciences should be counted rather with students in pure science than in applied science. And at Cornell there are no graduate students in law, and only a small number in medicine, while the University has no theological department. Paulsen points out, in his classical work on

the German universities, that through the influence of the philosophical faculty the faculties of the professional departments also have come to recognize it as their principal aim to make discoveries in the field of investigation. "As the medical faculty," he observes, "has been fructified by the investigations of natural science, so the faculties of theology and law have been fructified by philological and historical investigations, as they were in former times by philosophical" (pp. 529 f.). It remains to be seen whether graduate work in the arts and sciences in the United States is destined to have a similar influence on the work of the technical and professional schools. At the present time its influence is scarcely perceptible, except in schools of medicine, the best of which are nowadays giving much attention to independent investigation—which, however, is conducted by teachers rather than by students.

Returning from this digression, I dismiss also the subject of graduate study in the professional and technical departments, and invite your attention to the remaining two-thirds of the members of the Graduate Department at Cornell University. These, as I have already said, are divided just equally between the humanities and mathematics on the one hand, and the sciences of inorganic and organic nature on the other, the two together claiming the devotion of 140 graduate students. And it is undoubtedly in these departments of the University, rather than in the technical and professional schools, that we shall find the true nature of graduate work exhibited, and in its natural and legitimate results produced.

In noting the reaction of graduate work on the other work of the university I find it unnecessary, however, to make any distinction, at least at the outset, between the humanities on the one hand, and the sciences of nature on the other. With one or two exceptions, which will be noted later, the reports which I have received from the professors in all these subjects show that the effects produced by graduate work in the field of the humanities are not different from the effects which it produces in the field of sciences.

These effects may be surveyed from the point of view of the teacher, from the point of view of the student, and from the point of view of the courses of instruction.

It will be necessary, however, to distinguish between what may be called *ideal* conditions and *actual* conditions. Under the former I assume that the members of the staff are fully adequate to all the work required of them, whether graduate or undergraduate, and that they have at their disposal all the equipment, appliances and facilities for instruction and research which they really need. It is scarcely necessary to point out that, under the conditions which actually obtain in our universities, this adequacy of men and sufficiency of appointments do not generally obtain. And consequently, under actual conditions, undergraduate work may suffer because the best energies of an insufficient staff are given to graduate work.

Assuming, however, the ideal conditions which I have described, the most obvious, and perhaps the most beneficial, result of the prosecution of graduate work in the univer-

sity is its effect on the teacher himself. It keeps him intellectually alive, fresh, and growing; it prevents that crystallization which Goethe always dreaded, and to which he alludes in the opening words of Faust:

So gib mir auch 'die Zeiten wieder,
Da ich noch selbst im Werden war.

The almost universal confession of professors is that, if it were not for graduate work, they would fall into ruts in their undergraduate classes. The professor needs contact with more mature minds than those of the undergraduates; he needs the stimulus of necessity to keep abreast of the literature of his subject; he needs the free criticism and discussion of his statements which he can get only from graduate students. The teacher of graduates cannot presume to speak *ex cathedra*; he is a co-worker with his students in the discovery of truth. It is in the graduate department pre-eminently that the teacher can walk naturally in the footsteps of Socrates.

A professor thus engaged in investigation cannot fail to be a better teacher of undergraduates than one who is not so equipped. He may, indeed, not be so good a drill-master; but he will give to his students a better understanding of the *spirit* of his science, and of the direction in which it is advancing. He makes it possible for the undergraduate to feel the inspiration and zest of an individual search after truth, and to learn the methods by which advances in knowledge are effected. Nor does it matter that the specific knowledge which may be the subject of his graduate work differs from that which he communicates in his undergraduate classes: it is the *spirit* which he gains by these investigations that counts.

Thus for its effect upon the teacher alone the seminary of research has an importance far out of proportion to the small number of students who may be taking work in it. It compels the teacher to go forward. It surrounds him constantly with competent critics. It forces him to submit his work to the judgment of keen minds. When we cease to grow ourselves, when we lose interest in new ideas, we at the same time become incapable of arousing enthusiasm in students, and we seem to lose our insight into the manner in which ideas are communicated to, or developed in, them. As long as one is doing serious work in his own department, no matter how humble in character, he is not likely to be the slave of formulas or to become a pedant; but the moment he relaxes, the process of crystallization begins. The only hope for such a man is to get at work once more and do something on his own account. In the great majority of cases the result is not important for the learned world. But it is highly important for the man's own intellectual life and for his power of teaching. So long as the graduate student is with us, the professor cannot safely cease to be a student himself. The ordinary man tends to become unproductive when limited solely to undergraduate teaching. The stimulus afforded by sharing in the productive work of a graduate department affords to most teachers the necessary conditions for keeping intellectually alive. And the so-called fine teacher of undergraduates who is not interested in scholarship, and does not keep alive in his subject, is nowadays a natural object of sus-

picion. Where there is no enthusiasm for ideas on the part of the teacher, there will be no response on the part of the student.

Furthermore, the intimate personal relation into which a teacher is brought with his graduate students, his constant contact with the fresh ideas of young investigators, prevents him from growing stereotyped and rigid in his views. This intellectual old age is more to be dreaded by the teacher than physical infirmities. Now Dr. Osler has recently admitted that it is possible to escape the intellectual death which old age tends to bring by "running with the boys"—by keeping one's mind young and fresh through intimate association and intellectual companionship with the vigorous and daring thoughts of younger scholars. It is the graduate work, and the graduate work alone, which supplies the conditions for this intercourse.

So much for the effect of graduate work on the mind of the professor, who, I have assumed, is also the teacher of undergraduate students in the university. This is a very important assumption in its bearing upon what is to follow, for I pass, in the next place, to considering the effect of graduate work upon the undergraduate students. Manifestly this effect will depend upon the intimacy of the relation which exists between the graduate and the undergraduate departments. If the organization of the graduate school be such that the work is in the hands of a separate set of men from those who conduct undergraduate studies, and if the line of demarkation is so sharply defined that undergraduates are never admitted to graduate classes, on the one hand, and graduate students are not encouraged to enter undergraduate classes, the effect will be a minimum. If, on the other hand, graduate and undergraduate work is carried on by the same men, and especially if the heads of departments take an active part in elementary instruction, and the younger men in the faculty are encouraged to offer graduate courses, the effect of graduate work upon the collegiate work is likely to be profound. If, further, the relations of the graduate department to the college are such that the undergraduates who have had two or three years of elementary routine training may enter classes composed in part of graduate students, and conducted as graduate work should be, and if these intermediate courses are accepted by the graduate department as suitable minors for advanced degrees, so that there is every encouragement to graduate students to take the work, the effect will be good upon both classes of students.

The atmosphere created by advanced work and research cannot produce its full effect if the instructing staff and the students of the graduating school be distinct from the instructing staff and the students of the undergraduate department. The connection between the two should be as intimate as possible. From the point of view of the staff, the ideal arrangement would be for each instructor to teach both elementary and advanced work. From the point of view of the students, the undergraduates have everything to gain from intercourse with a body of earnest advanced students who are engaged in contributing to the advance of knowledge. Through this association the undergraduate is brought within sight of the firing line. He has the same advantage over the student of a small college that a traveler has over one who studies geography from an atlas. Undergraduates, especially upper-

class men, may, and often do, come sufficiently into direct or indirect contact with both critical and constructive graduate work to gain some sense of the incompleteness of human knowledge, some sense of the provisional character of its momentary status, and even some idea of the directions in which progress is making and the character of the methods employed to effect advance. This broadens the student's view of the knowledge that he is acquiring, and in some cases interests him in fitting himself to undertake graduate work.

It is difficult to conceive of anything which so largely contributes to the intellectual maturing of undergraduates. Even did they not mingle with graduates in the same classes, in laboratories and in seminaries, the mere presence among them socially of the graduate students would do much to quicken their sense of the seriousness and of the practical aims of university work. But more of helpful stimulus is, of course, due to the practice of uniting graduates and undergraduates in the same classes and laboratories, making fitness alone a criterion, instead of segregating each of the two bodies from the other. The abler upper-class men are thus brought into competition with a select group of maturer minds, instead of getting "the big head" and relaxing into indolence through finding themselves at the top of the ladder. The young men see older and maturer minds than their own living the life of the scholar (to a greater or less degree). They catch some of their enthusiasm for learning; have ideals of life and work held up to them different from the ones of the undergraduate; get a truer notion of values, and a truer perspective. A first-class high-minded scholar (not a pedant) in a graduate school has often more weight than any instructor, as he comes into more intimate relation to his associates and stands closer to their point of view. A vigorous graduate scholar is often the leaven which leavens the whole lump. Boys do like an intelligent gymnast.

It is through the graduate students that the undergraduates come most directly into contact with men engaged in research and devote themselves to scholarship, and, since ideals are contagious, the undergraduates catch from these men something of their spirit. The idea of a higher field of study beyond the bound of the undergraduate curriculum, where a student might be led by an experienced hand up to the frontier of human knowledge, and might see the work (and even participate in the work) of those who are engaged in pushing it into the unknown, is one of the most important and fruitful ideas which ever influenced the mind of an undergraduate. In the old college, with its fixed curriculum, the atmosphere was one largely of tradition, and little that of inquiry. Nor, so long as students remain young and immature, can this condition be changed by the substitution of elective courses for prescribed. An undergraduate is usually passing through that stage of development in which inquiry is seriously questioning tradition. How could he be more fortunately placed than in a university having a strong graduate department, in which the spirit of inquiry is in vigorous activity and controls the intellectual life of the community?

Let us now, in the third place, look at the effect of graduate work on the courses offered in the undergraduate department of the university. In an institution without a graduate department, certainly in the old-fashioned college, the courses offered to students were in the

main general and comprehensive. The object of these courses was to give the student a view, even though a bird's-eye view, of the entire field into which he had come. But the essence of graduate work is specialization. The man who engages in original research can cover only a small area. Wherever graduate work exists, therefore, there is a tendency to subordinate general courses to special courses, these specialties being those in which the head of the department is chiefly interested. That is to say, there is a natural, and almost irresistible, temptation to emphasize those divisions of the subject for which the teacher cares the most, of which he knows the most, and upon which the graduate work is chiefly founded. The example of the graduate student makes in the same direction. And from him the admiring undergraduate takes the cue, and hastens to limit his courses and his outside reading to a comparatively small group of topics; thus neglecting opportunities for laying the broad foundation which is not only necessary for culture, but upon which the most productive specialization itself is based.

There is a place in the college curriculum for courses in the minute study of subjects; but they should follow courses furnishing a general *Orientierung* in those subjects. The tendency has become very marked to sacrifice the student to the subject. And I look for a reaction in the interest of the student. For him introductory courses should be general, and they should be followed by courses increasingly specializing. The undergraduate should be permitted to advance along these courses as rapidly as his abilities and the character of his work warrant. The better class of undergraduate students in the advanced courses will mingle with the graduates. And the influence of the graduates through them slowly permeates the entire undergraduate body.

The remedy of the evil of premature specialization on the part of undergraduates is not to be found in the segregation of the graduate school from the rest of the university. On the contrary, let the spirit of the graduate school penetrate into the work of the junior and senior classes. But at the same time let us frankly recognize that freshmen have just come from the high schools, where their training has consisted almost exclusively of drill in languages and mathematics, and of memory work in history and in English. The ideal, therefore, should be that the first year of freshman work should only slightly depart from the methods of the preparatory school, but yet should introduce the student into the larger atmosphere of the university; and successively each year in college should depart a little further from the more elementary methods of teaching, and should gradually lead the students up to the work of the senior year, which would in large measure consist of investigation and elaboration under the direction of teachers, and in association with graduate students as fellow-workers.

So far I have been describing the effects which under ideal conditions the work of the graduate department naturally produces on the other departments of the university. And in this description I may claim to represent the consensus of opinion of the professors of Cornell University. In the reports that have come to me, however, there is a dissonant note which should be mentioned here. It does not come from any professor of science, but from

two or three professors of the humanities. A numerically weak minority, they express their contention in clear and forcible tones. Observing that the object of the undergraduate departments is to provide discipline with reference either to general culture or to professional application, and that the graduate school has the totally different aim of promoting research and adding to the sum-total of knowledge, they hold that these two ends are essentially distinct, involving different methods, would be better safeguarded by distinct organizations, and call even for different types of teachers.

"The university teacher—i. e., the graduate teacher," it is said, "must be an investigator; he must be a leader in research; he must stimulate and guide others to research. Eminence and success in his own line can be secured only by a devotion that excludes much intimacy with other lines of thought. Even with these limitations, the most unremitting toil is the price of maintaining one's position among one's peers. How different the college teacher! He must, of course, by taste and training be a student, and must continue always to be a student; but beyond a certain limit he needs breadth rather than depth. He can afford to disregard investigation and research, except as he accepts the results of these at second hand."

To be both a university and a college teacher, it is further argued, is practically impossible for one man. And the conclusion is drawn that the present mingling of the college and the university in one and the same institution is likely to prove disastrous to both. Whence the radical demand for a "total separation of the graduate school and the college, not only in their teaching, but even in their geographical location."

This is an objection to graduate work in our universities which might be made, however ideal the conditions might be. I do not intend to discuss this objection. It is enough to have stated it. I proceed to consider certain harmful effects which graduate work may produce on the other work of the university—due, however, not to any inherent incompatibility between the two, but to an insufficiency of men, appliances, and means for the proper discharge of the two functions.

It is said that in recent years advanced work and research have been increasingly attractive to college teachers ; have taken more of their interest and energy, encroaching on the equally important work of elementary teaching, which has proportionately suffered; that there have been more enthusiastic investigators and fewer enthusiastic teachers. As a result, the undergraduate secures a less thorough training than he got in former days under the drill-master. Obviously, undergraduate work does not benefit by graduate work, if it is neglected on account of it. When graduate work absorbs the time and energies of the best men in the faculty, the effect upon the undergraduates is disadvantageous.

It must, I think, be admitted that most university teachers, at least in the scientific departments, have chosen their profession not so much from the love of teaching as from the desire to continue the study of their specialty. While the number of those who have a positive distaste for teaching is small, there are many whose interest in teaching is secondary to their interest in investigation. If overloaded with elementary instruction, they

are therefore under a strong temptation to neglect their class work in order to gain time for the more congenial work of investigation. If they are teaching both graduate and undergraduate classes, there is the same temptation to neglect the latter for the sake of the former. If there is any yielding to this temptation, undergraduate work must suffer to that extent from the presence of a graduate school.

Two facts contribute to make this danger a serious one. The most obvious of these is the fact that the increase in the number of undergraduate students in most universities has been more rapid than the increase in the number of competent teachers. In consequence, the time given to work of instruction by members of the instructing staff is excessive. It is next to impossible to do the elementary teaching as it ought to be done, and yet have time and energy left for advanced work and investigation. The temptation to neglect the elementary work is increased by the fact that success in investigation leads more directly to advancement than does success in teaching. Published work of good character attracts attention at other universities as well as at home, and brings to the writer opportunities to better his position. On the other hand, the results of good teaching are not so directly in evidence.

In conclusion I venture to make the following remedial suggestions:

1. The dangers to undergraduate work which have just been signalized can be almost wholly removed by increasing the number of competent teachers to such an extent that no member of the staff is overloaded. There will then be no excuse for neglecting the elementary work for advanced work. Almost everyone enjoys teaching, if he does not have too much of it. And no institution should undertake both undergraduate and graduate work, unless it has an adequacy of staff and facilities for both.

2. As far as possible, every member of the corps of instruction should have some work with graduates and with undergraduates. It is a false notion that a man is good enough to teach the beginner, but not the advanced student. It is equally false to hold that the greatest scholar and the most experienced teacher is too valuable to devote his time to instructing the less advanced students. Of course, men differ in the nature of ability, and each should be placed where the greatest efficiency can be obtained. But it is a mistake for anyone to be limited *exclusively* to either side of the line suggested. To suggest even that a man is not fit to touch the highest grade of work is to destroy his ambition and his energy, and consequently his present value. To keep a man from contact with younger, less advanced students is often to encourage in him an indifference to the broader aspects of his field and an ignorance of its relations to other branches of learning.

3. There should be a distinct line drawn between graduate and undergraduate work. It is important to decide, and to announce in clear and unmistakable fashion, just what is and is *not* graduate instruction. No undergraduate should be admitted, as of right, to the graduate work, but any high-class student should have the opportunity to gain admittance to some graduate course (or courses), if he possesses the requisite ability and preparation. This privilege will give the undergraduate an opportunity to get a true idea of independent

scholarly study, will encourage him to go farther himself, and will cause him to use his influence among his associates in the same direction. The line I would draw should be distinct, though not a fixed, barrier, and a student should always know on which side of it he is. The practice of allowing students who may "have all their hours up" to register in the graduate department in the middle of the year is bad. The student frequently continues in the same classes and courses as before. This obscures the distinction which obtains (or should obtain) between the two grades of work.

THE REACTION OF GRADUATE WORK ON THE OTHER WORK OF THE UNIVERSITY

PAPER PRESENTED ON BEHALF OF COLUMBIA UNIVERSITY BY PROFESSOR WILLIAM H. CARPENTER

A fundamental difficulty in the discussion of this topic lies, of course, in the absence of fixed conditions, and of anything but a varying terminology to describe them. The term "university" is altogether a shifting concept, even when it is legitimately applied to those institutions which, like the members of this Association and others in the community, do actual university work. The relationship of the college to the university in America is still, and perhaps always will be, wholly indeterminate except as a general proposition; for those of us—and they are a majority of the whole—who, in the evolution of a system of the higher education, have developed the newer university by accretion about the nucleus of the older college, under the dictates of expediency as determined by environment have perforce evolved the former and retained the latter in positions widely divergent. In some few of our American institutions university work, from the beginning, has developed synchronously with the work of the college. In one case, at least, the general condition of development has been reversed, and the college at a subsequent time has been added to the university.

The relation of graduate work to the other work of the composite American university is dependent upon the place which it relatively occupies with regard to the whole: whether, on the one hand, it is a side issue, an accidental growth that has been allowed to develop without far-reaching thought, either of its own perfect fruition, or of its ultimate effect upon the parent stem; or whether, on the other hand, it has been recognizably an articulated part of the whole, a scion carefully set, not only to develop itself through its coherence with the earlier stock, but with a thought to infuse the latter with more energetic life as the result of its presence. Both of these conditions have existed in the development of graduate instruction in America. In some cases, to use another figure, graduate work has seemed to have been viewed very much as a by-product that has appeared in the process of more extended educational production, natural, doubtless, to the time and place, but to a certain extent unwelcome and embarrassing. In these instances, for reasons that have varied with the

fundamental conditions present, it has been accepted with toleration, and has even been allowed to increase, but it has not been conspicuously encouraged. In some of our institutions, partly as a consequence of such an attitude toward it, graduate work still concessively occupies a relatively small and insignificant place in the program of studies, with the necessary accompaniment of a small body of instructors to direct such work, and a small body of students to pursue it.

In others of our institutions, however, graduate work, even in its beginnings, has been recognized in its true aspect as a significant sign of the times, as the inevitable concomitant of more enlightened cultural conditions in the community; and these institutions have not only readily accepted it as part of an order changing, but by every means in their power have furthered it as a welcome expansion of educational opportunity. These institutions, by their attitude of approval, have given to graduate work an undoubted prestige in their body politic. With the development of the work that in many cases has naturally and logically resulted, there has been a necessary increase in the corps of instruction, and students have been attracted through the advantages offered by the increased equipment.

The relation of graduate work to the other work of a given institution, and the consequent reaction that will be exerted by the one upon the other, will depend upon the conditions enumerated, and others coexistent with them. It will depend upon the place which each has been accorded in the whole, and it will depend upon the attitude which the two have ultimately acquired in relation to each other. It will depend upon whether the one is rigidly superimposed upon the other, as is the case in some institutions, or whether the two are carefully articulated, as is the case in others. It will depend upon the relative amount of graduate work actually accomplished; upon the size of the body of instructors who conduct it, in relation to the entire corps of instruction in the university; and upon the number of students who pursue it, in relation to the entire student body. It will depend, too, to no small extent, upon the constitution of the body of graduate students; upon whether its members are sordid and self-seeking, and, consequently, in a measure aloof, as we have been told in some cases they are; or whether, as in other cases they appear to be, they are a sympathetic and patriotic part of the whole, who even more than the rest, because of a maturer and better appreciation of opportunities and purpose, are eagerly and enthusiastically bent upon enkindling their torches with the common fire.

At Columbia University the conditions of relationship between graduate and undergraduate work have been in action long enough to permit, along definite lines, a fairly accurate estimate of results in this particular environment. The amount, too, of graduate work, from the standpoint of the number of courses of instruction given, the size of the body of instructors giving them, and the student body taking them, is relatively so large and important that an influence is inevitably at hand, if at all, and should plainly be discernible.

Historically, the development at Columbia has been the gradual growth of graduate work about the pre-existent and coexisting college. There has been at no time a forcible expansion of such work, and, except in a single case of the gift of an endowment for the specific

purpose of teaching a remote, but important, subject—the Chinese language and literature—it has been supplied only because it has been demanded by intending students. The demand for graduate instruction has naturally arisen, and the provision of increased opportunity for it has paved the way for more.

Graduate work at Columbia is intimately articulated with undergraduate work along lines that are constantly broadening. In the academic year 1904-5, to cite the last complete statistics at hand, in a net total of 4,981 students in the whole corporation, inclusive of students in the Summer Session of 1904, but not of students in extension courses, there were enrolled under the three non-professional graduate faculties, philosophy, political science, and pure science—the *Philosophische Facultät* of the German universities—782 students, a great majority of whom were candidates for the degree of Master of Arts or Doctor of Philosophy, or both. These were students who, to quote a late presidential report, were “devoting themselves to pure scholarship and methods of investigation, with no professional end in view, unless it be teaching or public service in some capacity.” This total of 782, however, does not include 136 college graduates studying under the professional faculties of law, medicine, and applied science, who are also candidates for the degree of A.M. or Ph.D.¹.

The three faculties enumerated are *per se*, and in the sense of this paper, the graduate schools of the university, although since 1903 the Law School has also been a graduate school. Graduate students as candidates for the professional degrees are also widely distributed throughout the university. This same year 45 per cent. of the enrolment in the Medical School, 14.8 per cent. of that in Fine Arts, and 13 per cent. of that in the Schools of Applied Science were made up of the holders of degrees, or their foreign equivalents. There were actually in residence during this year under the corporation proper 1,378 students who had already been graduated from a college or scientific school, or a European institution of equal rank, or 47 per cent. of the entire body.

The total number of students enrolled under the corporation proper in 1904-5 was 2,935: of these 782, as has been stated, or 26.6 per cent. of the whole, 559 of them men and 223 women, were the students doing the actual graduate work of the University under its non-professional faculties. The degrees, or their foreign equivalents, already held by these students were widely distributed, in that 219 different institutions, 176 domestic and 43 foreign, were represented by their graduates.

For us, at Columbia, the development of the graduate work of the University has meant the development of the College. It has brought with it a notable expansion of the program of study, in which the undergraduate student has been fully allowed to share; it has furnished him with a stimulus and an added incentive; it has widened his horizon by his contact with students of a superior culture and a broader outlook; and it has in very many cases induced him to pursue farther a predilection which the ordinary opportunities of the college curriculum would never have brought into existence.

¹*Annual Reports, 1905*, p. 203.

The influence of graduate work upon undergraduate work is most directly and unequivocally exerted at Columbia in those courses of instruction which, although primarily graduate, under the arrangement of the program of study are open alike to graduates and to properly qualified undergraduates, from the nature of the case, regularly and usually members of the two upper classes of the College. There are offered in this way, during the present academic year, under 195 individual instructors, no less than 300 courses, open both to graduates and as electives to such undergraduates as are qualified to pursue them. Under the conditions that prevail at Columbia, the influence that is exerted in these courses is only in the rarest instances reciprocal. In the great majority of cases, and overwhelmingly, it is exerted from above downward. It is the graduate work which *gives*, and the undergraduate work which, as inevitably, *takes*, as a result of the contact.

The opening of courses primarily graduate to undergraduate students, and wholly apart from the fact as to whether the undergraduate is in a large number or a small number in such courses, is to elevate the character of the instruction. The effect upon the undergraduate student of the presence of graduate students in these courses—some of which, with the development of the college curriculum, must still have been offered as electives in the absence of the graduate instruction—is to stimulate him to increased effort by bringing him into intimate contact, in the class-room and outside of it, with fellow-students who, in the main, are maturer and of greater experience, and who are characteristically far more serious and eager in the pursuit of knowledge; of setting him, in short, a pace which he would not always have taken of his own initiative. The effect upon the instructor in such courses is to put him on his mettle and to induce him to give out his best; for he is conscious that his composite public is already possessed of a wider standard of judgment than is possible to the undergraduates of the home institution, who have never felt other than home influence.

The presence of graduate work elevates the whole tone of instruction in the institution—in any institution—by making it imperatively necessary to have in the corps of instruction of the university, not merely the teacher who teaches, but, much more largely than is either possible or useful in the college, the teacher who also investigates. And in just this way it widens the opportunity of the undergraduate student by giving him, in addition to the instruction which, under the conditions of the college curriculum, is of necessity first of all an exposition of accumulated knowledge, more surely than before a premonition, at least, of the spirit and method of investigation which through its own discoveries is adding to the ultimate total of knowledge. It has not only increased in quantity and intensified in quality the work performed by the undergraduate student, but by this demonstration of the meaning of receptive scholarship, on the one hand, and of productive scholarship, on the other, it has immeasurably broadened his horizon and pointed out a way for future usefulness.

The students of the non-professional graduate faculties who are pursuing their chosen lines of advanced study and investigation, and the teachers who, in directing them, are continually breaking new ground, "represent," as President Butler writes in the annual report of 1903, "the very heart of the University." "In the Schools of Philosophy, Political Science,

and Pure Science," he continues, "students and teachers are associated together in pushing forward the boundaries of human knowledge, and in increasing the measure of human appreciation in some way, great or small. It is this spirit of investigation, of the scholarship which produces and not merely relates, that gives to these schools their tone, and to the University as a whole its best inspiration."

FOURTH SESSION

THE CHANGING CONCEPTION OF THE "FACULTY" IN AMERICAN UNIVERSITIES

PAPER PRESENTED ON BEHALF OF PRINCETON UNIVERSITY BY PROFESSOR ANDREW F. WEST

I

The original sole faculty, and still the necessarily central faculty, of arts and sciences—the old "college faculty," with all that growth outward and upward has added—is as much as this short paper can sketch, even in bare outline. Within our generation it has greatly changed. It is our purpose to show not so much the history of that change as the present situation, and some of its implications.

The living root of the old faculty, as of every other part of the college, was a distinctively Christian ideal. It was that in serving the cause of knowledge and truth by promoting liberal education, men were serving the cause of Christ. Presidents, trustees, and professors were alike to give themselves in self-denial to their several tasks, mindful that this holy ideal was to guide and ennable their effort. And the old root flowered many a time in lives of strength and loveliness that remain as the fairest memories of the older period. Yet perhaps the ideal was too high ever to be realized generally by men, as men were and still are. Certainly it is an infinite pity that a narrow particularism, an insistence on the local and clannish, and a consequent sectarian warfare, somewhat mitigated by common-sense and kindness, so often disfigured the old college that its power for good was lessened. Let us make these abatements freely, and yet gratefully remember that the old college faculty at least professed, and tried to show, that God is the end of all our knowing, and that Christ is the Master of the schools.

With this ideal, then as now, the fiercely practical side of our American temper was found to be at variance. The sense of achievement in visible things fought against faith in the invisible. A nation had been made and kept together. Society had been "installed over a vast continent." We were free, as few people were, from such fearful dangers as poverty, famine, and invasion. Men could live free from fear. Careers were here for all who could make them. The elements of material good fortune were becoming ours beyond any measure known in history. And so the rival ideal of success, first in the out-

ward and then in the sordid way, has been growing with our growth, feeding itself all the while on the old eternal human selfishness. It has, of course, been true at all times, and notably so in times of trial like the Revolution and Civil War, that the nobler side has asserted itself, and that men in their thinking and doing "endured as seeing Him who is invisible." But the times of ease, plenty, and self-indulgence have not been friendly to the old college ideal, any more than they are friendly to the homely virtues of simplicity, clear sincerity, scrupulous respect for the rights of others, and modest independence.

Moreover, as is almost too obvious to need mention, and yet so clamorously important as to need sure remembrance, our whole life, including its educational preparation, has been getting more and more complex and tense. The individual counts for less and less. The aggregate, whether organized in corporate form or disorganized in wild, mob-like drifts of opinion and action, counts for more. To keep pace with our progress, to master the material of our lives so that the individual shall not be overwhelmed and crushed, some sort of organization becomes more and more imperative, if only that each man may have a fair chance to get his own good by co-operating and sharing in the common good. And out of this state of things has come an impatient message to our larger universities first, and then to the lesser ones. It is that efficiency must be our watchword (and catchword); that education is a business; that universities are corporations like banks, railroads, factories, department stores, and insurance companies. Notice is being served that if our university faculties do not conform to this notion, they must give way to faculties that will. This is the message. What have we to say about it?

II

Let us make some admissions. First of all, there has been a great deal of folly talked about the freedom of faculties and of individual professors. Would that the fact a man is a professor were sufficient proof that he is also a man of sense. Sometimes it is not even proof that he is a scholar. Before we talk of larger freedom, we must be sure in a given case that the individual professor, and in each faculty at least the strong majority, is fit to be free—that is, sure to serve well the one supreme end for which professors and faculties legitimately exist. That end is intellectual and moral freedom, not for the professors alone, but for all others with whom they come in contact. It is a case where reciprocity is the only protection.

And so the actual assumption of responsibility for using this freedom well must come in to prove a man fit to be free—to temper the judgment, to make us wise in counsel, considerate in action, tactful in winning men, swift to help, and slow to harm, every part of the university we represent. If no professor proposed a resolution in faculty—I will not say unless it were sensible, but unless he were man enough to see it through in execution, taking the blame for failure, and letting whoever would do so lay claim to the glory in case of success—we should then see a faculty undeniably fit for the widest freedom—an irresistible engine for the best work. So, too, if no professor coveted notoriety or lowered the academic tone of his lectures to attract attendance and applause, whether by exploiting some

novelty or serving up the things of superficial charm to please idle hearers, how much more boldly could we demand more freedom for each as well as for all! Plain common-sense, open-eyed sympathy, tolerance, modesty, balance,—these are some of the old undramatic virtues needed to guarantee that the free professor or the free faculty will be beneficently free. And yet let us not admit too much in this connection; for the fact that American faculties are not stronger in these virtues, and consequently freer, is not first of all the fault of our faculties but of the presidents and trustees who choose them; or else the fault of insufficient, resources.

Secondly, we must admit that universities are corporations, and that education is a business. Let us do so heartily. Is it not time we got away from hand-to-mouth living and rule-of-thumb reckoning, and recognized that business has its laws, and that experts must conduct it? Under American conditions, the management of a large university requires some stable corporate base in the form of trustees or regents, and one executive head—a president. Unless we are to go wavering and drifting, the primacy of president and trustees must be maintained. We cannot in this imitate any Old World system.

It is an immense gain that most of our universities are now so well managed on the business side. The wisdom of their investments has made more than one university treasurer's report a guide to prudent investors outside. The very complexities and annoyances in the terms of gifts and endowments, the variety of accounts and securities, and the calculation of probable revenues on less certain bases than many business enterprises possess, have evoked surprising wisdom. The net result has been that our leading universities, so far as the hampering conditions permit, usually make every dollar do its work. Would any man in his senses suppose that American faculties could or would do as well?

Then the same corporation must use business sense in creating and maintaining a faculty. The best professors procurable for the terms that can be offered, selection and promotion on recommendation of the president, and the unifying of educational policy by means of the same sole executive head, are necessities of our situation. In all this our universities have been learning the lessons of modern business efficiency.

III

Nevertheless, if this is the sum of the proposition that university education is a business, our faculties are in a bad way, because it means the destruction of their intellectual and moral freedom by reason of the substitution of commercial for academic standards. That this is the chief menace at the present time to the self-respect and usefulness of our professors and faculties, must be evident to all who know them. It is, of course, quite possible that we are in a transitional period, and that our faculties are moving with an inevitable trend of events. That remains to be seen. But, if so, we may be sure of one other thing, and that is a progressive impairing of academic standards, and an ensuing degradation of our faculties to the condition of mere employees. So far as this happens, universities cease living and begin dying. To avert such a result, or even the slightest menace to it, must we not then fight again the old fight for our academic birthright, and take part anew in *μάχη*?

ἀθάνατος for a reasonable freedom, intellectual and moral, personal and collective? Can university professors who are men give any but one answer to such a question?

The trouble is that the theorem, "Education is a business," is only a preliminary half-truth—the half-truth which, however, fills the eye and mind of our business men. The truth in it is that business method is the means, but not the end, of education. The other and better half is that "the business of a university is education"—the half which makes the first half valuable. And while the trouble in professors is that they are too often pitifully ignorant of the wholesome laws of business, the mate to this fact is that the business world is almost wholly ignorant of the laws of education. "Your plant is idle in the summer," said a British manufacturer to an Oxford professor: "You ought to put on a shift of men for that job." "The trouble with your plant," said one of our own captains of industry lately, "is that your output will not stand business tests. Every boy you graduate ought to be your standard finished product. Otherwise you should discard him early in the course as waste." "Suppose it happens to be your boy," he was asked; "and suppose this sample of waste turns out later to be a valuable by-product, or even the real thing. What then?" His answer was a prompt and creditable: "I don't know." The region of his ignorance included the domain of college education. If, then, it be true, that the very training which makes a man a professor dims his business faculties, is it not fully as true that the training which absorbs the life of a business man blinds his educational perceptions? How else, then, can this conscious or unconscious antagonism be mediated, except by recognizing that each has a lawful hemisphere? The hemisphere of business is secure enough from invasion, but for the hemisphere of education we badly need a new Monroe Doctrine.

Let us stick to our text, that the business of a university is education. It will then be clear that the character and extent of business methods allowable in conducting a university must be governed by the kind of business to be conducted. It will also be clear that, while the trustees or regents must strive to hold the university faithful to its trust, and to secure what will make it efficient in its every part, the faculty alone is the body capable, or to be made capable, of the conduct of all educational business according to educational standards. The first dangerous invasion of commercialism is naturally made upon the corporation—the body which connects the university with the outside practical world, the body which is therefore most accessible to attack. One and another trustee, in the laudable desire for efficiency, is apt to think first of the efficiency with which he is most familiar—the efficiency of the bank, the railroad, the business house. Under this impulse, he unconsciously veers away from the academic point of view. Soon others turn away; enough to make a working majority, and naturally the first point of common convergence is in centralizing the deliberative as well as active functions of the university, including much of the proper business of the faculty, and even of the trustees or regents, in the person of one head officer—the president.

I believe most firmly in high powers, and, in grave emergencies, irresistible powers, for

every university president—in quick control of everything at short range. But that is one thing, a safe and wise thing, provided always it is done in the environment of open inspection, quick accountability, close participation of all competent members of boards and faculties, and the most scrupulous jealousy in maintaining for everyone the utmost freedom of initiative, both in speech and action, that can be used with loyalty. Otherwise, so far as sharing in the common business goes, and so far as personal usefulness is concerned, we make boards and faculties personally and collectively less efficient for the very end they are created to promote, and the abuses of the business world are ominously repeated in the form of "dummy" trustees and "dummy" professors.

IV

The profound change, then, now in progress in our faculties is in the relation of the faculty to the president. The tendency borrowed from the business world, and increasing with the number of persons in the faculty, is toward individual and collective dependence on the president. And yet, so far as this does not curtail the self-respect of honorable professors by abridging their freedom to teach what they really believe, or to take part fully in the business of the faculty without prejudice to their standing or livelihood, even if they do not happen to agree in one or another important matter with the president, then, whatever is to be said against this increasing dependence as a danger to efficiency, it cannot be criticised as an attack on personal freedom. And it is here we think the test should be found as to what constitutes a professor's reasonable freedom. For, after all, the university must pull together or it will pull apart. And though the head is not the whole body, or the major part of the body, the academic body, like the human, must have a head, unless it is to be a lifeless trunk; and only one head, unless it is to be a monstrosity.

Is there anything, then, that needs to be suggested in order that the faculty, keeping to its own function, and showing loyal deference to its head, may be kept from deterioration as the sole organ whose function it is actually to conduct university education efficiently? Let us examine some of the suggestions that have been made:

1. That the president, as the responsible head, should initiate all important measures of educational policy. This means that he initiates such measures either alone, or by putting them in operation by the action of the corporation, and thus imposing them on the faculty; or by introducing them in faculty after shaping them in conference with a committee of the faculty; or by proposing them first in open faculty. There is something to be said for even this extreme view. It is that the university has one clear policy, that the president has untrammeled opportunity, with practically exclusive responsibility for doing whatever he thinks should be done. Let us take a daring step and go so far as to say that there may be momentous occasions when the president must "go it alone" or face an absolute *impasse*. Let us trust such occasions may not occur, or even occasions when the corporation and president may come to feel that they must join to impose unwelcome laws on reluctant faculties. Such situations merely argue the university to be in a very bad way.

Introducing measures of policy, after shaping them in a committee or department, does, of course, recognize that there is value in expert counsel, and introduction in open faculty recognizes and welcomes the helps and advice of all. These are natural methods for any president who wishes his policies to be understood by his colleagues, and the latter method is the one which insures the most cordial assent, and in the long run the greatest efficiency; though, it must be confessed, the penalty is sometimes the long-suffering endurance of professors who darken "counsel by words without knowledge." When the first reference of measures is made from the faculty to its committee for digestion and formulation, rather than by first reference of measures in predigested form from the president and a committee to the faculty, the sense both of freedom and of responsibility is quickened in the minds of the faculty as in no other way. Yet, whichever of these various modes the president may use, the general thesis that the president should initiate all important measures of policy has more against it than for it. Every measure thus proposed becomes an administration measure and seems to challenge at the outset the loyalty and security of everyone who may not be able to agree with it. In such circumstances the free utterance of real opinion, unless it happens to be in substantial accord with the measure proposed, becomes almost impossible. Self-criticism is one of the necessary educational functions of a university, in order that all its measures may have the preliminary test as to whether or no they are well-considered on all sides, and will work well when put in operation. Whenever, for any reason, the atmosphere of a faculty room is not friendly to this free utterance, the results are sure to be disheartening. Some professors will develop a cynical disregard of their duty to speak what they think; the weaker ones will be constrained to evasion, or even official hypocrisy; and all will exhibit, in varying degrees, a loss of interest in the welfare of the university, except in so far as their own personal fortunes are affected. This turns professors into place-holders and place-hunters. The logical end is the destruction of responsibility, and consequently of interest, on the part of the faculty in the important measures of policy on which the higher welfare of the university depends. Need it be added, by way of warning to those who believe in subjecting universities to the standards of the business world, that a faculty thus circumstanced becomes increasingly inefficient and also unattractive to the best professors?

2. There is the suggestion of dual control by the president and faculty. This seems to me worse than the former; for if the one seems to spell autocracy, the other spells weakness and discord. In case the president is a strong man, it means ceaseless friction between him and an oligarchy of professors. If he is a weak man, it means that the presidency is reduced to a chairmanship by courtesy. In either event it means structural weakness in the university, and an unsteady attitude which keeps producing trouble inside and distrust outside.

3. Some may perhaps favor the idea of faculty ascendancy. For us Oxford and Cambridge are its best examples. The professors there are virtually their own trustees, and they choose their own vice-chancellor. The plan has one very great advantage—personal freedom in a higher degree than is known in our faculties or even in Germany. But let anyone who would introduce it here remember the abysmal differences that yawn between that situa-

tion and ours. Oxford and Cambridge are indeed more democratic in the matter of professorial freedom than we are. But it is a democratic freedom that rests upon an aristocratic presupposition, the freedom of the professorial caste resting on a tradition sanctioned by centuries of privilege, checked and counter-checked by the balancing of intercollegiate rivalry, and issuing in restriction of all initiative to a small council, elected, to be sure, but so constituted as to be changeable only very slowly. Admirably in accord, as it is, with the stable and soberly balanced love of liberty, "broadening slowly down from precedent to precedent," that has made England great, it is not a faculty model that can be reproduced here. But may it never perish there!

4. There remains to consider what can be done under our own conditions to invigorate and perfect the faculty, not only to save it from the subtle poison of commercialism, but to make it do its educational business efficiently with full self-respect and in sure harmony with the president and corporation. I believe the one thing to be done is to revive in full power the democracy of the faculty, with its free president honored supremely and followed steadily as the one natural as well as official leader of free professors. Only by following this path shall we be enabled to escape the rank commercialism which believes in its heart that a university is something like a store, where the trustees are the proprietors, the president the manager, the professors the employees, and the students the capricious customers.

And here we have to stop a moment to notice a futile remedy that appears in many forms. It is the remedy of committees and departments and councils and senates. We are organized to death. It is the "worship of machinery" all over again. Of course, these things have constant and even indispensable uses. We must know where things are, or we shall never find them. For the routine business, the ever-recurring humdrum task, the mechanics and economics of our work, we shall always be needing these things—but always as our servants, never as our masters. If behind the complex of our committees we do not have the watchful criticism and helpful co-operation of the whole faculty; if the faculty does not really understand what its agents are doing, or what their measures mean, then the committees are virtually the faculty, and the faculty becomes little more than a listless and dwindling audience. This may do well enough for routine business, but not for the understanding or co-operative execution of a great policy. For unless a faculty actually controls all its parts and agencies, it cannot do its business in the best way, nor can it long maintain its just freedom.

Let us face the situation. American faculties are weaker than they ought to be, so far as concerns their power to maintain educational standards and to perform their own educational business. Their great growth has called for better organization; but organization has progressed too much without regard to the fact that the object is not organization, but education. The greater centralization of functions in the president, with all its advantages, has been at the expense of the free and proper exercise of the functions both of faculties and of corporations. But this is not all. The decline of the old college ideal, which involved

as one of its corollaries a definite liberal education by means of a few common studies of central importance, has been profoundly influencing the character of our supply of professors. Less and less emphasis has been placed on the general make-up of the man, and more and more on his specialized knowledge. The destructive theory that a professor is solely a teacher or investigator, and no longer a whole man, has shorn him of a priceless part of his academic citizenship. This view has been followed by its sequel, that the professor is concerned only with his specialty; and so not only have we been acquiescing in the view that his intensive special knowledge is properly accompanied by an extensive general ignorance of other subjects, but we have been cheerfully accepting professors who are almost totally blind in regard to the affairs of university education. Professors have been going by such differing paths of preliminary training into their several by-paths of special study that they are not only getting far apart intellectually, but find they have no one common ground to which they may ever return and meet in full fellowship. It is the very satire of our history that, along with centralization of the presidential functions and the constitution of elaborate machinery to keep things working together, there has been a corresponding dispersion, from another cause, of the men who most need to stand constantly together in counseling for the best good of their universities. This must be changed, if our faculties are to consist more and more of men of all-round ability—men who are able to see, and fit to solve, larger questions with the moderation of wisdom. This means a renewed and better realization of the old college ideal which aimed to turn boys, not first of all into merchants or bankers or lawyers or professors as such, but into well-balanced, self-directing, strong men. If this standard shall be restored to its primacy, we shall see in operation an indispensable force for the production of professors who are fit to be free. Meanwhile, recognizing the full rights of all parties involved, and recognizing further the need of beginning without delay, the all-important thing just now is to revive in vigor the democracy of the faculty. This means that it is the duty of every member to take part and make his voice heard in the business of the faculty, without arrogance and without fear, until such time as it becomes clear to his colleagues that he is not fit. Then he should subside. How shall we ever be educated as faculty members, unless this is done? There will be some time wasted. Unwise suggestions will find utterance. They will meet with their natural corrective in the criticism of others. It will be well worth while. One priceless result will be that whatever the faculty does will be its own free act. With this will come the sobering influence of responsibility to make all men who are not without sense use their liberty sensibly. Other good things will follow. A living tradition in things intellectual and moral will be established—a tradition that will enable the university to exhibit to the world, with some show of definiteness and continuity, the ideals for which it stands. These are the only traditions that have a chance to outlast the men who make them.

To this end committees and executive officers—such as deans, heads of departments, and chairmen—should really be the choice of the faculty, even though the presi-

dent names them. All committees and all officers used by the faculty in its service should be accountable to the faculty, and their reports and proposals should be freely debated.

But what, it may be asked, is to happen in case the faculty and president do not agree? A presidential veto is no remedy here. So far as I can learn, it has never been used with satisfaction to anyone concerned. What then? I see only one way. If, after debate, a faculty persists in its action, the right of the president, on recording his dissent, to take the whole matter for review to the corporation should be a matter of course; and unless the faculty is overwhelmingly against the president, a wise corporation will usually sustain him. But nothing will have been smothered. The voice of the faculty will have been heard, and responsibility will be placed on the president and corporation, where it belongs. Contrariwise, if the president accedes to some faculty action which he does not approve, but which he does not think needs to be taken to the corporation, then again the responsibility is placed where it belongs. If it turns out that the action of the faculty was wise, the responsibility is rightly placed on the faculty, and the president wins approval for his considerateness. If it turns out that the action of the faculty was unwise, then again the responsibility is rightly placed on the faculty, and the president's opinion gains new weight. We do not need more machinery. We need this common understanding. It will make steadily for justice, peace, freedom, and efficiency.

No university ever acquires true grandeur unless its faculty is made up of free men; no faculty discharges its duty happily and amply unless it is free to propose and debate what it thinks right; and, finally, no wise faculty will do other than help its president, whether it happens to agree with him or not, so long as he devotes himself faithfully to his most arduous task. That task is to promote among his colleagues, his students, and all whom his university can influence, the intellectual and moral freedom of men. And so I return to the opening thought: The old college ideal is the true one. We need it more than ever to save our universities—presidents, trustees, professors, students, and alumni, and all whom they can influence—from the degrading personal and official servility that comes from commercializing our higher education.

DISCUSSION OF THE CHANGING CONCEPTION OF THE "FACULTY" IN AMERICAN UNIVERSITIES

[ABRIDGED FROM THE STENOGRAPHIC REPORT OF THE PROCEEDINGS OF THE ASSOCIATION]

MR. VAN HISE: I believe that unity in a university is more important than administrative efficiency, and just so sure as the president and deans and councils are made superior to the faculty the university will lose unity. Indeed, to control general university policies, I believe in a single university faculty which includes every member of the instructional force, so far as participation in debate is concerned, with every person of professorial rank as voting members. To that faculty the various administrative committees should be accountable, and while they may have full power in carrying out settled policies, important variations of policy should be reviewed by the faculty. This proposal of course does not interfere with the power of the faculties of the several

colleges to control their own affairs. It seems to me it would be a profound mistake for the president to depend upon his own initiative. If he is not in close fellowship with his faculty, so that they freely come to him with their best suggestions, the institution will make educational progress very slowly indeed. It has been my privilege to receive suggestions freely from the Wisconsin faculty.. For my own part, I would sooner see a measure in which I believe not passed, than to have it passed over the faculty. If I cannot present the advantages of the measure so that it appeals to their reason, then, in all probability, I am wrong in my educational policy. It may be that in some cases the faculty may be wrong; educational progress might have gone a little faster, had the faculty been overruled; but the grand average will be much better by the thorough co-operation and harmonious relations which come from mutual respect and mutual acceptance of one another's idea.

Possibly a president ought to have appeal to a corporation over the faculty. An emergency might arise in which this power might be necessary; but a president will be very wise to use that power rarely. I never have used it, and it would be an extreme case in which I should do so. If a measure were adopted by the faculty of which I thoroughly disapproved, which I could not carry before the trustees with my recommendation, I should ask the faculty to appoint a committee to present that subject to the trustees, so that the faculty should have full representation of their view. I might be obliged to dissent from that view, and then the trustees must exercise their final responsibility.

In conclusion, I think it is important that all the members of the instructional force shall know why a thing is done. If there is a senate above the men, and that senate takes the initiative and passes acts which have been opposed by the faculty as a whole, there is dissension; if, on the other hand, everybody has been given opportunity to express his views fully, then every man feels: "I had my opportunity to express what I had to say; the faculty has voted so and so; that stands as the university action and I will support it." I may be in a somewhat extreme position in regard to this matter; I would have not only perfect liberty upon the part of all our members of a faculty, but I would have unity and concentration of power in a single faculty for general educational policies.

MR. REMSEN: I am not much interested in machine organizations; it has always seemed to me that there is only one condition of success: if you have a faculty and president with common-sense, things will work out all right; and if you haven't they won't. You can have the most ingenious machinery in the world, and the thing will fail.

It seems to pass without question, by the way, that colleges were better in the years gone by than they are now. If that is true, then all the colleges in the country should come together and remodel their systems of instruction. I believe the colleges are improving. I don't believe our forefathers were perfect men. In political matters our forefathers were just about the same as we are; there were ring men then as now. We may talk of those good old days in our colleges when every man turned out was a perfect man, every mark was a perfect mark, and every professor was just the kind of professor we want; but I doubt whether this will bear investigation. I believe our professors are just as good men, just as much interested in the welfare of their students and the formation of character, as they were formerly. On the whole, I believe the race of professors is improving.

MR. STRINGHAM: It is certainly true that a small body of men, all of whom have good common-sense, will get along without very much organization, but with a very large unit there is great economy in the proper sort of organization, in proper division of labor and distribution of duties.

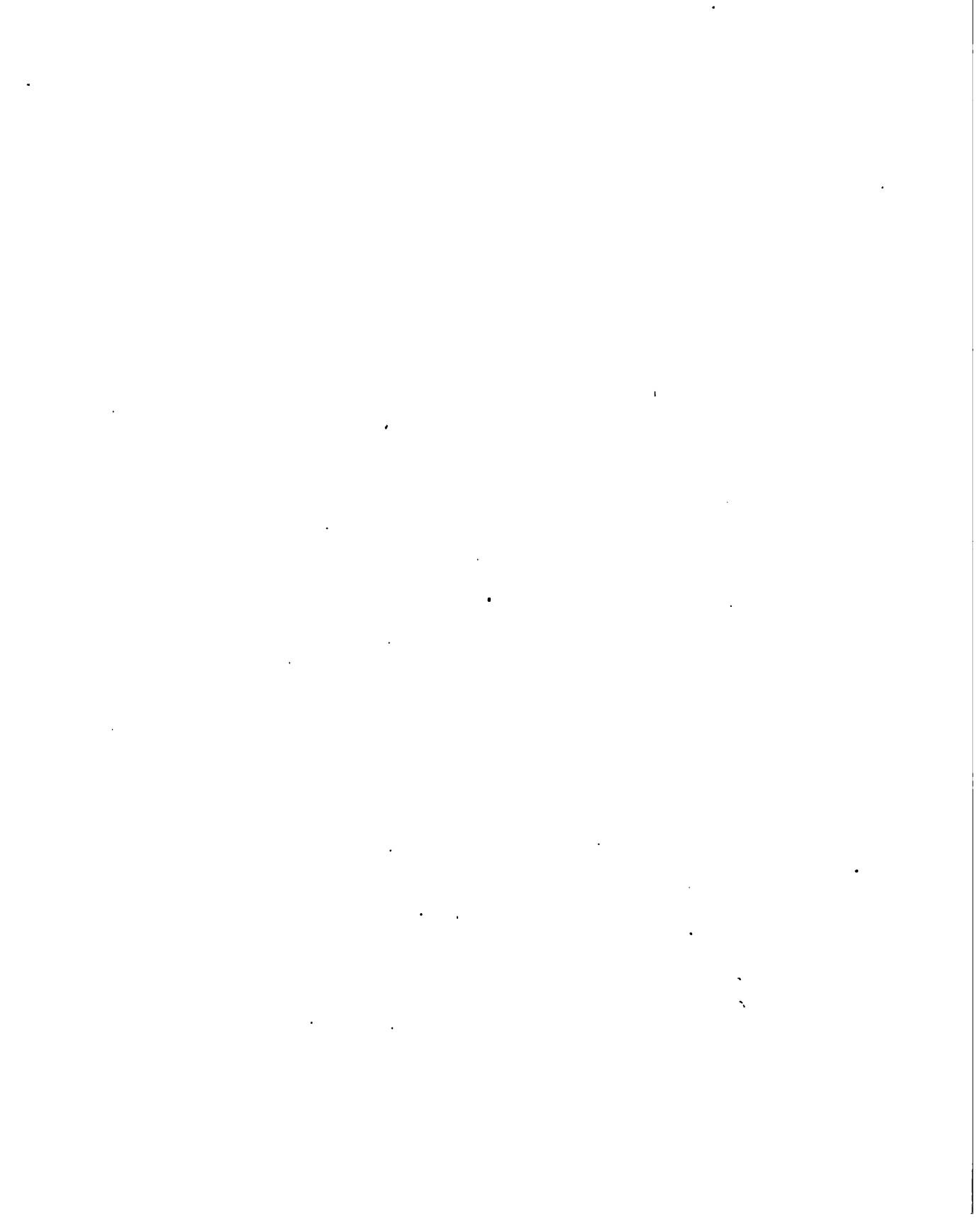
A department of ten or more men will save a great deal of time, if it is organized as a body and work is done in a systematic way; but every member of the department should have the power of initiation. Within the large departments there is just the opportunity for the individual initiation for the younger members of our faculties. They are much more ready to express opinions than they are in open faculty. The department, however, should be subject to the general legislative assembly of the entire university. Our "Senate" is more than three hundred strong—a very unwieldy assembly when it comes to legislation on details; but it always has the veto power and the power to determine university policies.

The administrative function, the financial function, the academic function proper, are three distinct matters, needing distinct functions for their conduct, and this distinction should be well emphasized in our organization.

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